Royal Commission on the
Future of the
Toronto Waterfront

CANADA

Commission royale sur
l'avenir du
secteur riverain de Toronto

The Future of the Toronto Island Airport: The Issues

**A Report by the Staff of
the Royal Commission
on the Future of the Toronto Waterfront**

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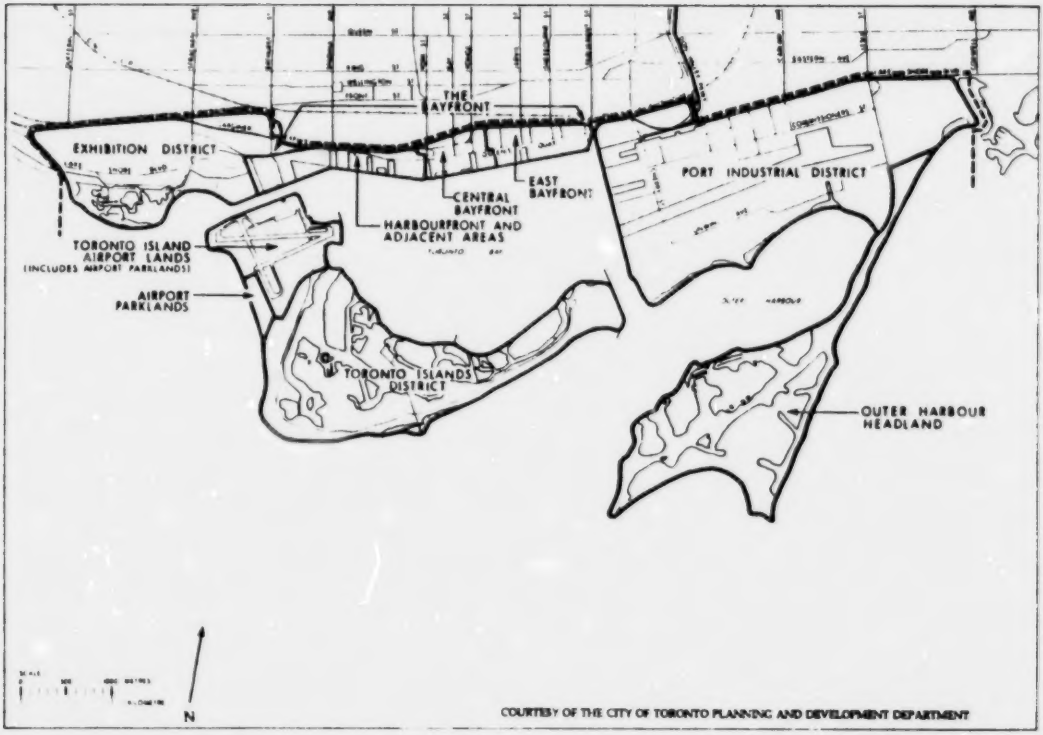


TORONTO ISLAND AIRPORT AND THE CENTRAL WATERFRONT

Preface

The mandate of the Royal Commission on the Future of the Toronto Waterfront is based on the premise that waterfront lands within federal jurisdiction should be operated in the best physical, environmental, legislative, administrative, and economic interests of the public and for their use and enjoyment.

This Report, The Future of the Toronto Island Airport and Related Transportation Services: The Issues, was prepared by staff of the Royal Commission. It focuses on issues associated with the Toronto Island Airport; it examines matters involving the Airport and related transportation services and develops strategic options to deal with aviation needs, the needs of the travelling public, and the overall interests of all users of Toronto's waterfront.

This Report is not intended as a definitive statement but, rather, as the basis for further thought and discussion on the future of the Toronto Island Airport when hearings on the Airport's future resume in June 1989. Final recommendations will be made by the Commissioner shortly thereafter.

Introduction

This is one of a series of discussion papers prepared by staff members of the Royal Commission on the Future of the Toronto Waterfront. It follows Persistence and Change, which dealt with the role and mandate of the Toronto Harbour Commissioners and the Port of Toronto.

The current paper looks at another aspect of the Toronto Harbour Commissioners' responsibilities, the Toronto Island Airport, which the THC has operated and managed since the facility was established in 1939. The Report is presented in three parts. The first describes the Airport's origins and history, noting significant changes that have occurred at various stages of its development, including the 1961 capital program, the introduction of scheduled services in the 1970s and of Short Take-off and Landing Aircraft (STOL) in the '80s, and the signing of the 1983 Tripartite Agreement amongst the City of Toronto, the Toronto Harbour Commissioners, and the federal Minister of Transport.

The second section reviews the submissions of some 50 deputants who appeared at five days of hearings devoted to the Airport, which were held by the Royal Commission in January and February 1989, and assesses the issues that were raised during those hearings.

The third part of the Report is a broad description of a number of approaches in making decisions about the future of the Toronto Island Airport, which are being considered by the Royal Commission.

In order to complete the Royal Commission's public consultation process, further hearings on Airport issues will be held on June 20, 1989; at that time, those who did not have the opportunity to present their views during the first hearings will be heard, as well as those who have already participated and wish to make any additional comments.

The Commissioner, the Honourable David Crombie, announced during the January/February hearings that he will make recommendations to government concerning the Toronto Island Airport and related transportation services, based on what, in his view, best meets the overall public interest, taking into account the Airport's

location on the waterfront, the needs of the travelling public and those of airline and aircraft operators, as well as the comments offered at the hearings.

Chapter 1

History

Island Formation

The Toronto Islands originated as a spit composed of materials eroded from the Scarborough Bluffs. Over time, as the result of the stronger waves from the east, the spit shifted westward from the Bluffs and, influenced by southerly winds, its advancing tip turned progressively northward.

In more recent history, negotiations over ownership of waterfront land, which took place between the Commissioner of Crown Lands and the City of Toronto, were concluded in January 1847. For a fee of £2 Sterling, Toronto was granted a licence of occupation of the shorefront marshes and the peninsula.

In 1852, the spit became an island as the result of storms that created breaks near the eastern end of the harbour; on that occasion, the breach was filled by the harbour authorities. But on 13 April 1858, the peninsula was again breached -- this time to a width of more than 457 metres (1,500 feet) and to a depth capable of accommodating the largest steamers of the time.

In 1867 the Canadian government issued a patent transferring ownership of the Islands, except for a 4.5-hectare (10-acre) reservation around the lighthouse, from the Crown to the City.

The Constitution Act, 1867 (formerly the British North America Act, 1867) assigned all properties within public harbours to the Crown; the rights to ungranted waterlots outside public harbours remained with the governments of the provinces. However, the boundaries of Toronto Harbour were not defined until the Toronto Harbour Commissioners Act of 1911.

The first major shore-protection project at the Toronto Islands was a dike built along the south shore in 1882. The flooded lands behind the dike were reclaimed later that year and a 152-metre (500-foot) wide

eastern gap was retained. In 1902, the Islands were further extended when a breakwater was constructed along the southern shore of the sandbar.

Because of sediment dispersal caused by wave activity, it became increasingly difficult to maintain the Western Channel and, in 1910, the federal government had a new channel dredged, 122 metres (400 feet) wide and 731.5 metres (2,400 feet) long. That construction resulted in extensive land creation at the present site of the Airport.

When the St. Lawrence Seaway was opened in 1959, the Western Channel was dredged again, this time to accept vessels drawing up to 7.90 metres (26 feet) of water and, until late 1974, it was the main entrance to the Toronto Harbour; in 1975, a widened Eastern Channel was opened to navigation and became the main harbour entrance.

In 1879, the land area on which the Island Airport now stands comprised 145.68 hectares (360 acres). As a result of the various diking, dredging, and landfill activities, it now covers an area of approximately 332 hectares (820 acres).

The Airport island is located approximately 2.4 kilometres (1.5 miles) southwest of the City centre; it is served by a ferry with a mainland terminus at the foot of Bathurst Street, south of the intersection of Bathurst and Lakeshore Boulevard.

Toronto Island Airport (TIA)

The Toronto waterfront has played a part in Canadian aviation since 1909, when Charles Willard landed in Toronto Harbour after a barnstorming flight. The first dry landing on the Islands probably took place two years later, when Willard competed with J.A.D. McCurdy in Canada's first "cross-country" air race, from Hamilton to Toronto. By the 1920s, Torontonians were seriously considering use of the Toronto waterfront for commercial aviation. On 4 October 1928, the City Board of Control resolved:

> ... that the Harbour Board [the Board of Toronto Harbour Commissioners] be asked to report on developing the West Island Sand Bar for a seaplane, flying boat and amphibian airplane base.

The Board was asked by Colonial Airways to provide temporary facilities at the foot of Scott Street for operating amphibious aircraft. A ramp was built and, on 15 July 1929, regular airmail service, using Sikorsky amphibious aircraft, began operating between Toronto and Buffalo.

On 19 June 1929, City Council approved an expenditure of one million dollars for the first of two phases of construction of a modern airport for seaplanes and amphibious aircraft, to be located on a site designated as a permanent air harbour. But, with the onset of the Great Depression, the project was abandoned.

In 1931, City Council appointed the Advisory Committee on Airport Facilities for the City of Toronto; it concluded that there was a need for a municipal airport, initially to handle airmail but eventually for passenger traffic. Although Committee members suggested that another airport be built northwest of the City, no action was taken on the proposal.

In the early 1930s, great improvements were made in the reliability and performance of land-based aircraft, leading to expectations that, by 1937, both cross-country and trans-Atlantic routes would be in operation. In 1935, the federal government headed by R. B. Bennett was searching for employment creation schemes and agreed to spend one million dollars on the construction of a tunnel under the Western Gap; with the election of a new government in Ottawa, however, the project was again cancelled, after only minor work had been completed.

In November 1936, the City established the Special Committee on Airport Matters to study the City's needs and the feasibility of creating an airport on the Islands. The following year, the City approved construction of two municipal airports and, with the federal Department of Transport, agreed in November 1937 to locate the municipal airport on the Toronto Islands, with an airport to be built near Malton as a back-up facility in the event of fog.

The City was responsible for paying half the $1.9-million cost of the construction of the two projects. The Toronto Harbour Commissioners (THC) were requested to manage construction and to operate both airports.

The regatta course which existed on the designated site was filled in, and construction was completed. In honour of an upcoming Royal Tour, the facility was then commissioned as George VI Airport in 1938, the same year that the other airport opened in a quonset hut at Malton. In 1939, the City of Toronto leased the Malton Airport operations to the federal Department of Transport but retained the Harbour Commissioners as administrators and operators of the Island Airport.

During World War II, the Island Airport became a Norwegian Air Force base. Airmen's quarters were built north of the Western Gap, adjacent to the former Maple Leaf Baseball Stadium (near the present Tip Top Tailors site).

In the years after World War II, Malton became the main passenger airport for Toronto, while the Island Airport was used mainly for training, light private and commercial aircraft operating mostly during daylight hours.

In 1957, the City agreed to transfer ownership of Malton Airport to the federal Department of Transport, in return for which Ottawa undertook to construct a 1,219.2-metre (4,000-foot) lighted runway at the Island Airport, a terminal building, and an aircraft hangar, as well as handling maintenance and operation of an air traffic control tower. In 1961 the Island Airport site was extended east and west by landfill and the promised facilities were built.

By 1967, TIA was the fourth busiest airport in Canada, logging 240,000 flights, but nine years later, air traffic had decreased 24 per cent. In 1971, Central Airways, the only fixed base operator at the Airport, ran a flight training school and an air charter service, and rented aircraft. They owned or leased 26 single-engined aircraft and employed about 30 people.

For a decade, beginning in 1974, Air Atonabee began scheduled passenger service from the Island Airport, using Canadian-built Saunders ST 27 aircraft; by 1984, it had 54 employees and was carrying 25,000 passengers annually.

Advent of Short Take-off and Landing Aircraft (STOL)

In 1971, the Government of Canada was committed to becoming a world leader in STOL technology and, by 1982, it had invested more than $500 million to support that objective, including the cost of acquiring DeHavilland Aircraft.

Considerable local interest developed in providing inter-city STOL services in the Quebec/Windsor corridor because of its implications for the regional economy and the employment potential for DeHavilland. This led to serious proposals for 'a quiet STOL airport' at Toronto Island, none of which ever materialized.

Joint Committee-Toronto Island Airport

The Island Airport's operations were generally unprofitable and, in 1974, the federal government agreed to the THC's request for a subsidy, subject to intergovernmental agreement on the future of the facility. In March of that year the Joint Committee-Toronto Island Airport, was convened with representation from the federal, provincial, Metro and City governments and from local community organizations.

The Toronto Island Airport Intergovernmental Staff Forum (ISF) was established in 1975 to provide technical assistance to the Joint Committee and to evaluate alternative uses for the Airport site. The ISF, in turn, was directed by a Policy Steering Group consisting of the federal and provincial ministers of transportation, the federal Minister of State for Urban Affairs, the Chairman of Metro Toronto, the Mayor of Toronto, and the Chairman of the Board of Toronto Harbour Commissioners.

After looking at a wide range of possible uses for the Airport site, the ISF evaluated three in detail. It could be used for general aviation only, general aviation and Dash 7 STOL service, or recreational use with or without housing.

When the ISF tabled its findings in March 1977, the federal, provincial, and Metro governments favoured the general aviation/STOL option while the City wanted general aviation only. Because of the disagreement, further discussions did nothing to resolve the problem.

The Canadian Transport Commission (CTC) Decision on STOL

Between February 1980 and March 1981, the Canadian Transport Commission (CTC), an independent body established to give advice to the federal Minister of Transport on the licensing of commercial air services, held hearings on an application by Canavia Transit Inc., one of five carriers that were applying to operate STOL services between the Toronto Islands, Montreal, and Ottawa. The City of Toronto intervened in the hearings, on the grounds that changing Toronto Island Airport into the City's second commercial airport would run counter to municipal efforts to promote recreation and housing on the waterfront; moreover, the City said, the costs of a STOL service would exceed any benefits it could provide.

The CTC concluded that the adequacy of air services in the Toronto/Montreal/Ottawa triangle should not prevent the licensing of new carriers that would provide more convenient services to the travelling public. The Commission was also of the opinion that the improved service offered by STOL justified it on the grounds of present and future public convenience and necessity.

Although the CTC was satisfied that there was a need for the service, it did not award a licence, both because of the City's opposition to the STOL and to construction of the necessary STOL infrastructure, and because Transport Canada had not committed itself to upgrading the Island Airport or providing that infrastructure.

The issue of the Airport's future remained a matter of local interest until February 1981, when Toronto's City Council recommended that the Mayor's advice be accepted: that an agreement be reached with the federal government and the THC to develop the Airport for general aviation and limited commercial STOL service -- provided the City's waterfront objectives could be protected.

The Southern Ontario Multimodal Passenger Studies (SOMPS)

SOMPS was a comprehensive review undertaken in 1978 by the federal and provincial governments to examine inter-city surface and air passenger transportation in the Windsor-Quebec City corridor. The study found that urging passengers on the Toronto-Montreal route to go by train, rather than plane -- even if trains were able to go faster

than at then-prevailing speeds -- would not attract many people to trains; furthermore, while STOL service might offer some relief at already crowded Malton Airport, it was not sufficient to justify STOL facilities at TIA.

Memorandum of Understanding

In June 1981, a *Memorandum of Understanding* (MOU) was signed by the federal Department of Transport, the City of Toronto, and the THC detailing conditions under which a limited STOL passenger service could be established at the Island Airport.

STOL Licence Granted

In August 1982, the federal Cabinet directed the CTC to issue a Class 1 Licence (see Appendix A) to City Center Airways to operate a commercial STOL service between Toronto Island, Ottawa/Hull, and Montreal/Victoria STOLports, using DeHavilland Dash 7 aircraft.

Tripartite Agreement on STOL

On 30 June 1983, a 50-year Tripartite Agreement, which superceded the MOU, was signed between the City, the THC, and the Department of Transport, providing for continued use of City land at TIA for a public airport for general aviation and limited commercial STOL service. Under the agreement, jet-powered flights are permitted only for medical evacuations, emergencies, and during the Canadian National Exhibition Air Show. Aircraft movements were to be limited to ensure that the actual 28 NEF noise contour was respected and contained within the boundary of the official 25 NEF contour for 1990. (For further explanation of NEF contours see Appendix D.) The agreement was amended in July 1985 to permit operation of the DeHavilland Dash 8 aircraft at TIA.

City Express Operations

City Express came into being in 1984, when Air Atonabee was acquired and renamed and its operations moved from Peterborough to the Island Airport. It continued to provide scheduled service, which grew rapidly: in 1987 it carried 350,000 passengers, more than 10 times the number

Air Atonabee had flown only three years earlier, and it now serves Montreal, Ottawa, London, and Newark.

Current Improvement Program

In 1984, Transport Canada began a $21-million program to improve facilities for general aviation and for limited STOL service at TIA. Projects included a new air traffic control tower, two Microwave Landing Systems (MLSs), and expansion of the terminal apron; the air traffic control tower and one MLS are in use and installation of the second system is nearly complete.

Toronto Airport System

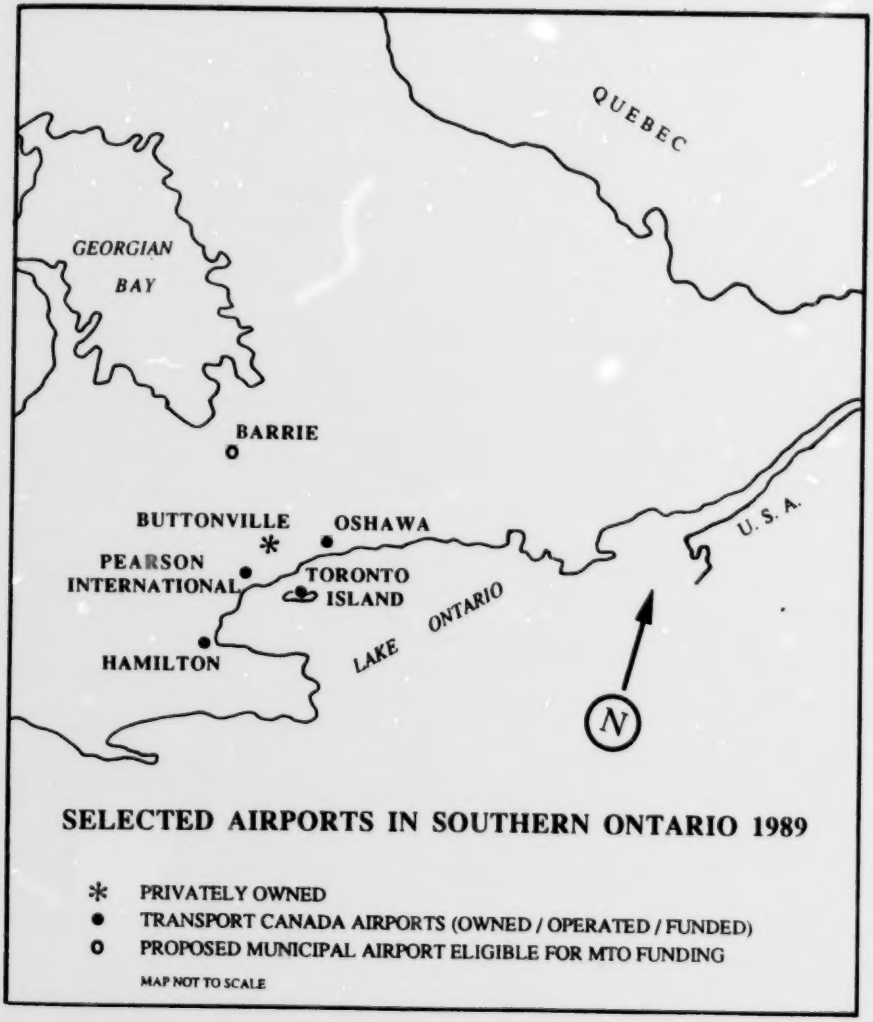
The Toronto airport system comprises Pearson International (formerly Malton), Toronto Island, Buttonville, and Downsview airports. There are also airports in Hamilton, Oshawa, and Barrie, but they are not included in this analysis. Of those examined, only Pearson International, Toronto Island and Buttonville have scheduled operations. (Their annual aircraft movements are highlighted in Figures 1-4, based on statistics found in Appendix A.)

Lester Pearson International Airport

Of the two Toronto airports with significant passenger traffic -- Pearson International and Toronto Island -- passenger traffic at the latter represents about three per cent of the total Toronto traffic and about five per cent of total domestic traffic. In 1987, Pearson had 314,000 flights, the TIA 198,000; more than half of those at TIA were local, while the majority of those at Pearson were itinerant (i.e. travelling from one city to another).

Buttonville Airport

Buttonville Airport comprises 48.6 hectares (120 acres) and is owned by Toronto Airways Ltd. Its main runway is adequate for short-distance commuter operations by turboprop aircraft with as many as 50 seats and it is used primarily as a general aviation airport, being the base for 340 aircraft. In 1987 it was the eighth busiest airport in


QUEBEC
GEORGIAN
BAY
BARRIE
BUTTONVILLE
OSHAWA
PEARSON
INTERNATIONAL
TORONTO
ISLAND
HAMILTON
LAKE
ONTARIO
U. S. A.
N
SELECTED AIRPORTS IN SOUTHERN ONTARIO 1989
* PRIVATELY OWNED
• TRANSPORT CANADA AIRPORTS (OWNED / OPERATED / FUNDED)
o PROPOSED MUNICIPAL AIRPORT ELIGIBLE FOR MTO FUNDING
MAP NOT TO SCALE

Canada, with 163,000 movements, but generated revenues of only $2.4 million. During the past five years, it has accumulated losses of nearly $600,000 but, as a private airport, is not eligible for government subsidies.

The site is said to have a value of more than $120 million, raising the possibility that it will be redeveloped for other land uses; if the airport is closed, some traffic will likely move to TIA. The current owner has asked government to buy him out if it wishes to maintain the facility as an airport.

Downsview Airport

Downsview Airport is used primarily by DeHavilland Aircraft and by military helicopters. It was examined in the 1977 Toronto Island Study Program as a possible STOLport, but the idea was eventually ruled out because of Downsview's close proximity to Pearson International. Recently, part of the original site has been designated by the federal government for redevelopment for housing.

Toronto Island Airport

As mentioned earlier, Malton became the Toronto's main airport in the post-war years and the importance of the Island Airport declined. Hampered by poor surface access, short runways, and the lack of electronic landing aids, TIA was used mostly by light commercial and private aircraft operating in daylight hours under visual flight rules.

In 1967, TIA was the fourth busiest airport in Canada in terms of annual aircraft movements (240,000). By 1976, the number of flights had fallen by nearly one-quarter and the net growth of itinerant movements was negligible. There were 50,000 itinerant flights in 1966, which increased to only 62,000 flights in 1969 and declined to 49,000 in 1976. Moreover, the drop occurred at a time when such nearby airports as Malton and Buttonville were operating at near capacity.

According to a General Aviation Study of 1972, in 1970 there were no scheduled passenger flights from the Island Airport and only 434 non-scheduled passenger flights. Commercial flights by light aircraft accounted for 63 per cent of all movements, private flights for 33 per cent, and government and military flights for the remaining four per cent.

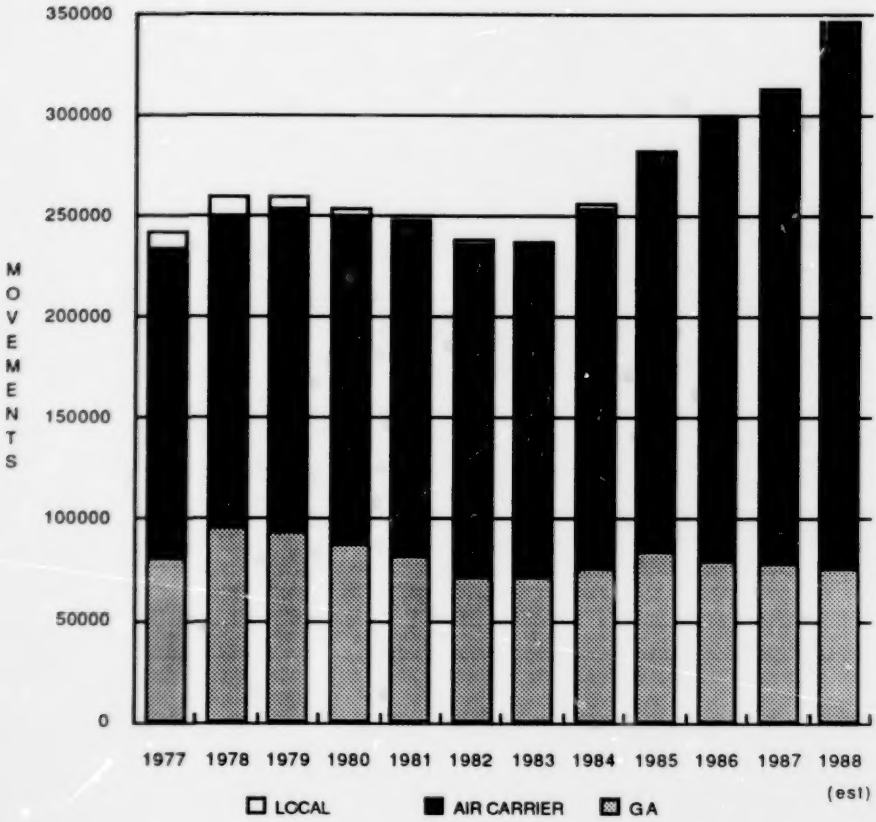
In 1970, 63 per cent of all itinerant flights were by commercial aircraft; 86 per cent of all flights were by aircraft weighing less than 1,814 kilograms (4,000 pounds) and only two per cent were by aircraft exceeding 4,082 kilograms (9,000 pounds).

In 1971 Central Airways, the only fixed base operator at TIA, offered flight training, charters, and aircraft rental; the company owned or leased 26 single-engine aircraft and employed approximately 30 people.

According to Transport Canada, of the 120 aircraft based at the Airport in 1972, 20 were on floats and 10 amphibious.

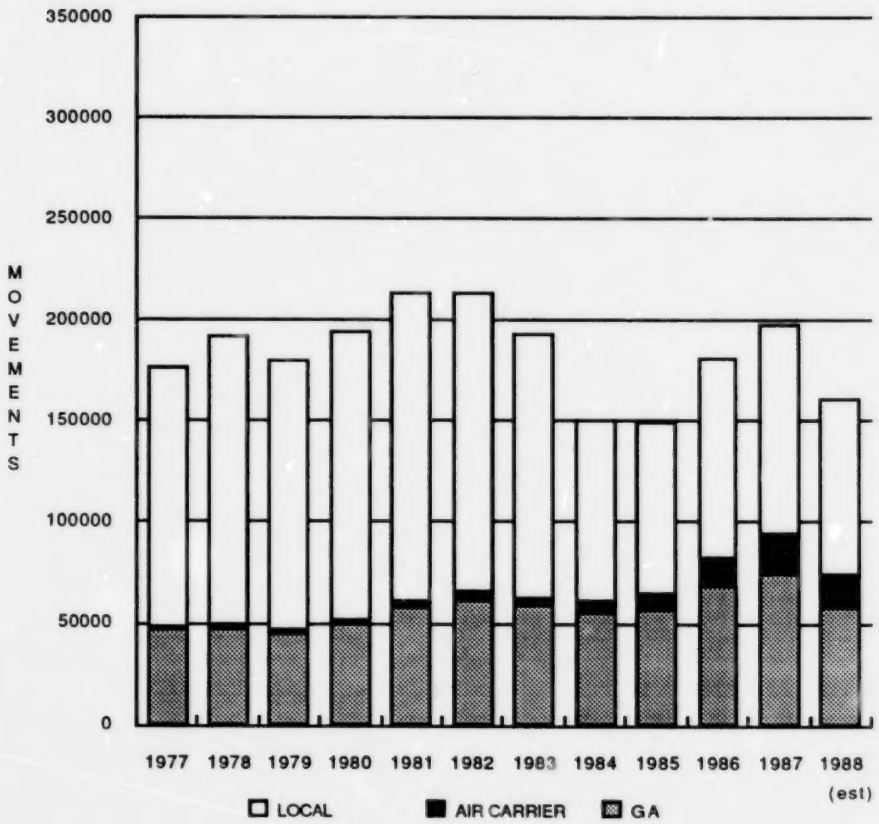
A 1976 user survey revealed that 71 per cent of those questioned used the Airport either for pleasure flying or for flight training. The typical firm using the TIA for business purposes had 50 employees and half the users were involved with secondary manufacturing, public adminstration or personal services. Two out of three business users chartered aircraft and one out of five used private or corporate aircraft; nine out of ten business flights and four out of ten non-business flights were to points outside of the Airport's control zone.

FIGURE 1
PEARSON INTERNATIONAL AIRPORT
General Aviation, Scheduled Air Carrier, and Local Aircraft Movements
1977-1988(est)



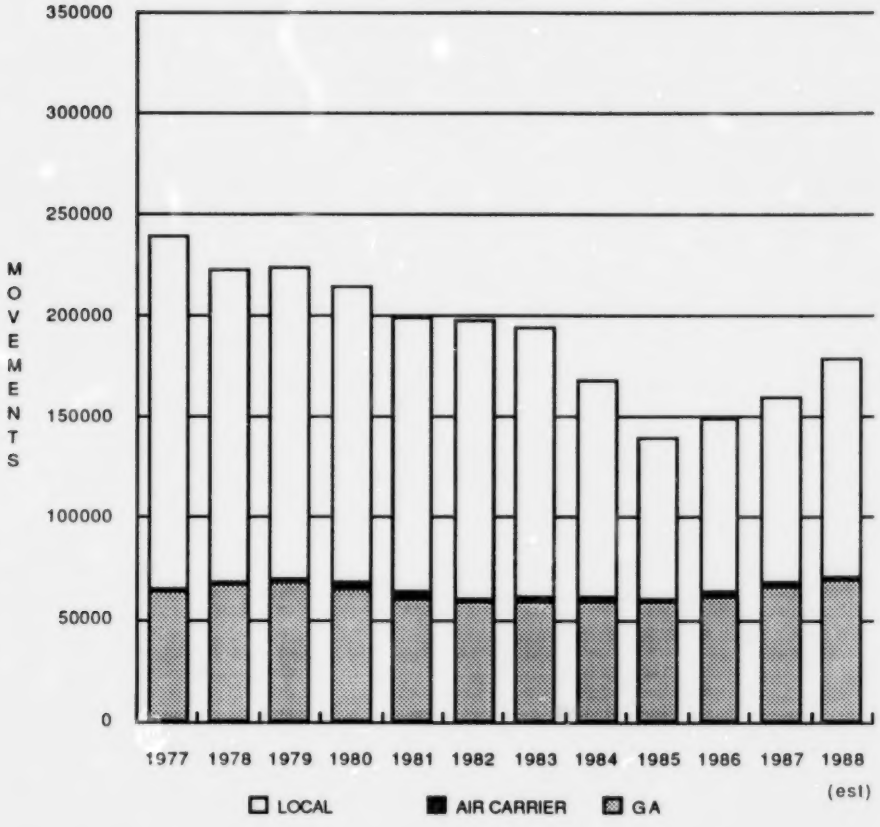
Source: Transport Canada, 1989.

FIGURE 2
TORONTO ISLAND AIRPORT
General Aviation, Scheduled Air Carrier, and Local Aircraft Movements
1977-1988(est)



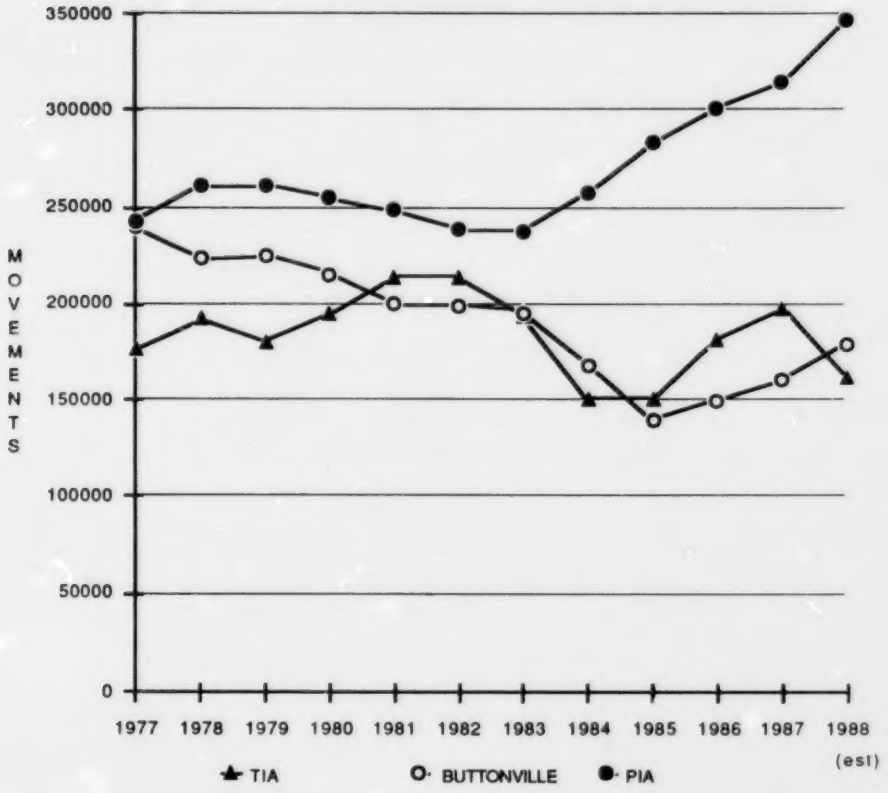
Source: Transport Canada, 1989.

FIGURE 3
BUTTONVILLE AIRPORT
General Aviation, Scheduled Air Carrier, and Local Aircraft Movements
1977-1988(est)



Source: Transport Canada, 1989.

FIGURE 4
TOTAL AIRCRAFT MOVEMENTS
for Pearson International, Buttonville,
and Toronto Island Airport
1977-1988(est)



Source: Transport Canada, 1989.

Regional Role of TIA

The Island Airport is a regional facility which, according to Transport Canada's definition, is one that supports a CTC Class 1 single-plane service to a national or international airport, as well as direct non-stop scheduled or charter services to at least three other airports. (See Appendix B.)

TIA Passenger Market

A major factor inhibiting passenger traffic at the Island Airport is that runways are too short for the larger aircraft favoured in the mass air commuter market. Interest in TIA as a commuter airport grew only after STOL aircraft that could carry 50 people became commercially available around 1970.

The majority of the scheduled aircraft operating at TIA are turboprops, which are generally slower than turbojets -- a significant disadvantage on routes of 322 kilometres (200 miles) or longer. However, because of the TIA's closer proximity to downtown Toronto's business district, turboprops operating from the Island Airport can compete over longer distances with turbojets operating from Pearson Airport.

Airport Capability

At present, TIA's 1,259-metre (4,000-foot) runway can handle aircraft carrying up to about 50 passengers over distances in the 300 to 400 nautical mile range, or one hour flight time. A number of studies estimate that there about between 800,000 and 1 million passengers annually in the market for such flights.

The largest aircraft now operating from the Island Airport is the 50-seat Dash 7, which competes with jets on routes of up to approximately 483 kilometres (300 miles). The annual air carrier capacity of the Island runways is approximately 125,000 movements.

The passenger capacity of the Island Airport is determined by Instrument Flight Rule (IFR) operations on the main east/west 06-26 runway, which has a peak hour capacity of approximately 40 to 50 landings and take-offs combined. Under certain wind conditions, other

runways can also be used for take-offs and could marginally increase the capacity of the system. Runway capacity is not likely to be a limiting factor in the operation of TIA.

Technical Operations at TIA

There are a number of operational support facilities at airports, which vary according to the scale of the individual airport and the amount of traffic it generates. The following are the relevant facts and rules, as they apply to Toronto Island Airport.

Whenever possible, all air carriers and many general aviation aircraft operate under IFR. Air navigation routes in the Toronto area have evolved to the point where all IFR traffic moves by way of a well-defined and established airway system.

The Visual Flight Rule (VFR) capacity of TIA depends on the mix of aircraft and the proportion of training flights using the facilities. Air carrier aircraft will use Microwave Landing Systems (MLSs) at all times to achieve the steep approach and climb-out gradients necessary to minimize noise. During VFR conditions, the result will be mixed IFR and VFR operations and reduced VFR capacity of the runways. Consequently, the number of general aviation movements that can be accommodated will be constrained.

At Toronto Island Airport, VFR weather conditions -- ceiling greater than 3,048 metres (1,000 feet) and/or visibility greater than 4.83 kilometres (three miles) -- occur approximately 88 per cent of the time between 7:00 a.m. and 10:00 p.m. Total wind coverage provided by the runways during VFR conditions is approximately 98 per cent.

TIA Facilities

The Passenger Terminal

The passenger terminal is a two-storey wood frame building constructed in 1938, and designated a historical structure by the Toronto Historical Board. Total ground floor area is approximately 622 square metres (6,700 square feet). Much of the lower floor is devoted

to passenger and airline uses, while the upper floor is occupied by airport-related government and other services. The building interior has been renovated in the past but, because of its age and historic nature, full restoration would be costly in terms of the usable space it would yield.

The Runway System

The airport has three runways: 06-24 and 15-33, built in 1938, and runway 08-26, built in 1961. Each of the first two is 914.4 metres (3,000 feet) in length; the third is 1,219 metres (4,000 feet).

The favoured runway is 08-26, which has a coverage of approximately 84 per cent at a 10 knot cross wind. During IFR conditions, the winds also favour runway 08-26, which has a coverage of approximately 97 per cent at a 15 knot cross wind.

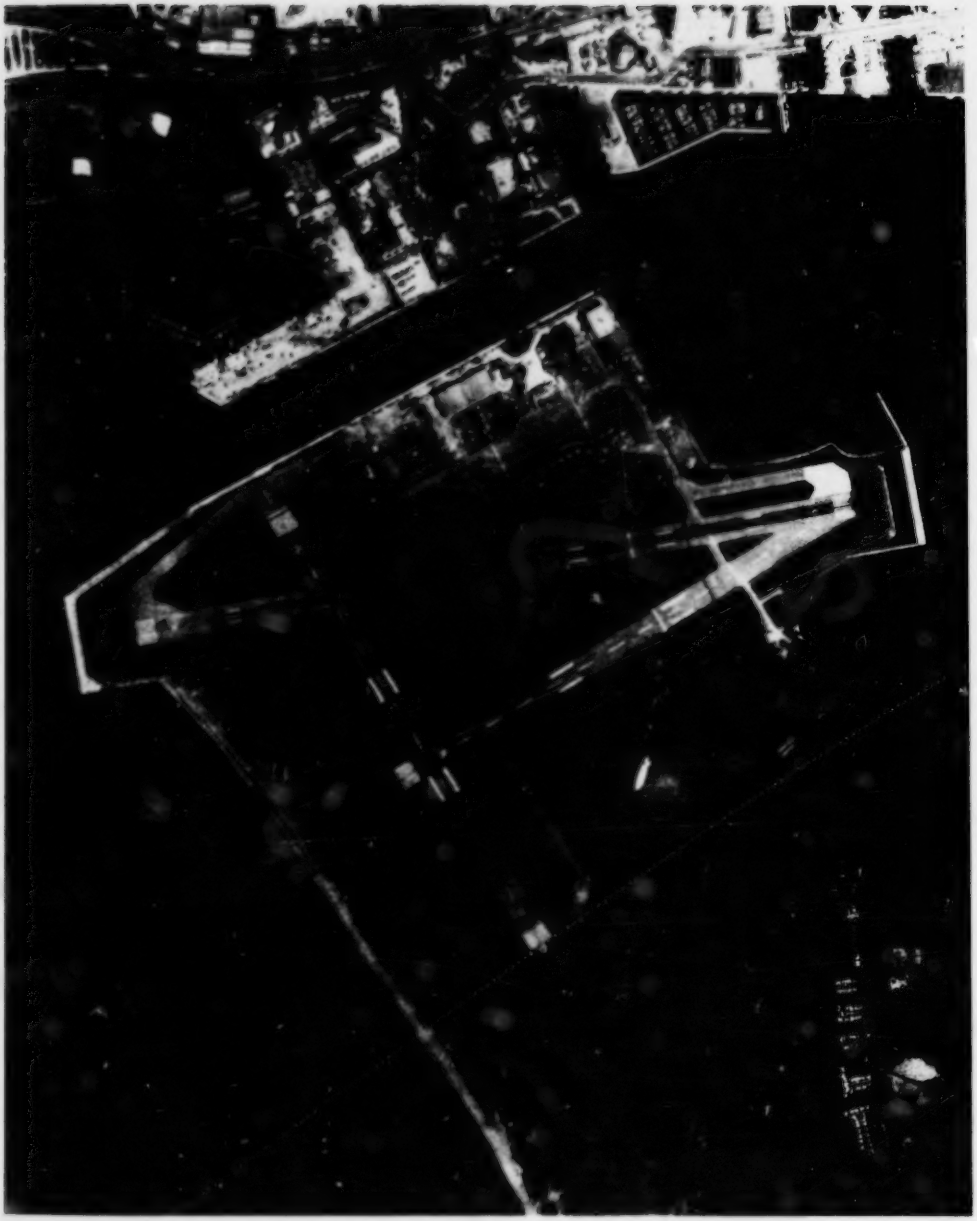
Airport Lighting and Electronic Aids

A dual Microwave Landing System (MLS) has been installed for runway 08-26 to provide precision approach capability. The project includes Distance Measuring Equipment (DME), Runway Visual Range (RVR), and provision of high-intensity runway lighting.

Aircraft Parking

The Airport has three paved aircraft parking aprons: the largest is the public apron in front of the passenger terminal and is used by both general aviation and air carrier aircraft. The second apron forms part of the Hangar Three and Four complex and the third serves hangars One and Two. All three aprons were built for small aircraft, which makes it difficult to manoeuvre such large aircraft as the 50-seat Dash 7. The problem is exacerbated by a shortage of aircraft parking stands.

The public apron, constructed of asphalt and concrete, was 218.8 metres (720 feet) long and 48.7 metres (160 feet) wide; it has recently been extended approximately 30.5 metres (100 feet) to the south. An asphalt helicopter pad is located adjacent to the southeast corner of the public apron and a grass tie-down area stretches along its southern boundary.



AN OVERHEAD VIEW OF THE TORONTO ISLAND AIRPORT

Photographic reproduction courtesy of Toronto Harbour Commissioners.

A seaplane ramp is located at the eastern boundary of the Airport and has an adjacent paved area for seaplane storage.

Hangars

There are four hangars at TIA, all owned by the THC and all located north of the main runway. Hangar One, built in 1938, has an area of 1,783.7 square metres (19,200 square feet) and is leased to City Express. Hangar Two, which dates from the same period, is in poor condition and is on short-term lease to an aircraft repair company. Hangars Three and Four, which are newer, each have a floor area of 1,625.8 square metres (17,500 square feet).

Air Traffic Control

A new air traffic control tower, which accommodates the control cab and administrative space, was recently constructed at the northwest corner of the Airport.

Meteorological Services

Weather office services are provided by a manned Contract Aviation Weather Reporting Station temporarily located between the administration building and Hangar Three. An automatic recording station is scheduled to be installed by 1991.

Car Parking

Commercial parking space for approximately 125 vehicles is provided on the mainland by the Toronto Harbour Commissioners. The lot was recently relocated to a site immediately east of the ferry slip and is heavily utilized by passengers and Airport employees.

Access to the Island Airport

Ferry Service

Because of the existence of the Western Channel, surface access to the Airport has been by passenger and vehicle ferries ever since the Airport opened in 1939. The first vessel was a cable ferry that pulled itself across the Channel along a steel cable, the ends of which were fastened to the retaining walls on either side of the gap. In 1963 that arrangement was replaced with a nine-passenger tug operated by the Harbour Commissioners. A separate Parks Department vessel was used to transport freight.

In 1964 the THC purchased the *Maple City* from the Ogdensburg Bridge Authority; the vessel, which can carry 40 passengers and four automobiles, continues to provide main access to the Airport from a landside slip at the foot of Bathurst Street. The ferry, which is operated by the THC, has a three-person crew on two shifts, and makes four round trips each hour while the Airport is operating. Its 40-passenger limit is set by federal marine regulations and is determined by crew size.

The *Maple City* has good ice-breaking qualities but is sometimes delayed when ice jams the slips. On approximately 10 to 15 days a year, storms force operations to an inner harbour route between the seaplane dock on the east side of the Airport and a mainland dock near the Canada Malting complex. This route, which requires a long walk in the open, is often inconvenient for passengers, particularly those carrying baggage. Routine ferry maintenance also causes two to three days of downtime each year.

In 1987, the *Maple City* operated 18.5 hours a day and carried 800,000 passengers and 37,600 vehicles. Concern has been expressed regarding the continued use of the ferry, particularly if annual air passenger traffic were to increase substantially.

Access Improvement Studies

Improved surface access to TIA has been the subject of many formal and informal studies. Past reports include the 1965 Atkins Hatch Study, the 1977 Metropolitan Toronto Planning Department Study, the 1982

Access Study Group Report, the 1982 City Center Airways Proposal, the Ontario Ministry of Transportation Proposal and the 1985 City Express Access Study. These studies are summarized in Appendix C.

These reports present many options for access to the Airport, including improved ferry service, a pedestrian and/or service tunnel, and a bridge over the Western Channel. None of the many recommendations has actually been implemented to date because of a lack of the necessary unanimous agreement by all parties involved. Parking requirements for the various access alternatives were also studied, and are summarized below.

Automobile Parking Requirements

The 1977 Metropolitan Toronto Planning Department Study predicts that, by 1990, parking for the Airport and the regional STOL service will require space for between 320 and 420 vehicles. The forecast assumes heavy use of downtown check-in facilities by air passengers, who are transported from the Royal York Hotel to the docks by City Express's no-fare bus service.

Based on a 1982 ferry passenger survey, the Access Study Group (Joint Co-ordinating Committee for TIA Development) estimated parking requirements on the mainland at 310 spaces, increasing to 400 spaces in the longer term. The group felt that this number of spaces could not be provided by surface parking and proposed a 400-car garage. They recommended that a pedestrian tunnel from any parking area to the Air Terminal Building should not exceed 183 metres (600 feet).

In 1982, City Center Airways Ltd. estimates based on Air Transit data showed that approximately 740 spaces were required for both long-term and short-term passenger parking at TIA. They also concluded that, if long-term parking at the Airport were controlled by charging commercial rates, the amount of required parking could be reduced to approximately 310 to 330 spaces.

In 1988, consultants engaged by City Express proposed construction of a parking structure for 1,200 cars incorporated into a causeway across the Western Channel. Their alternative proposal was a bridge and 280 surface parking spaces, which would later be

augmented with a later provision of a 400-car parking garage. Their access tunnel option included similar parking provisions.

The Regulatory Environment

Legislation and Regulations

The Island Airport is licensed by Transport Canada as a public airport and is operated by the THC. The design, operation, security, safety, and inspection of airport facilities are governed by *The Aeronautics Act*. The Canadian Transport Commission is responsible for awarding routes and for licensing air carriers. Because the Airport is also used by international traffic, its geometric, operating, and safety standards must conform to International Civil Aviation Association (ICAO) Annex 14 to the Convention on International Aviation.

The operation of the ferry to the Airport is governed by the Federal Transportation Act. Regulation of land use near the Airport is the responsibility of the City of Toronto. The provincial Ministry of Municipal Affairs policies on compatible uses are contained in a document titled Land Use Policy Near Airports; the Ontario Ministry of Housing regulates noise insulation provisions in buildings.

The Aeronautics Act

The Aeronautics Act authorizes the Minister of Transport to control civil aeronautics in Canada. Under the Act, the Governor in Council may make regulations including those regarding:

- noise from aerodromes and aircraft;
- the classification and use of air space and the control of aerial routes and air space; and
- prevention of incompatible land use.

Air Carrier Regulations, which classify carriers and aircraft for licensing purposes, were established by the CTC under the Aeronautics Act. Under Section 3 of the Regulations, seven classes of commercial air services operating within Canada and five categories of Canadian carriers offering services to the United States have been established.

(See Appendix B.) Each class of commercial air service operated with fixed-wing aircraft is divided into groups based on aircraft weight.

The National Transportation Act

Promulgated in 1966-67, the National Transportation Act defined and implemented a national transportation policy designed to achieve economic, efficient, and adequate transportation by all modes. Part I of the Act established the Canadian Transport Commission, which is authorized to set up committees to regulate all modes of transportation, to implement this policy, under which the operations of TIA are regulated.

Official Plans and Land Use Zoning

The zoning agreements and regulations controlling land use near the Island Airport include:

- the Tripartite Agreement;
- Registered Airport Zoning;
- the Official Plan for Metropolitan Toronto (currently under review);
- City of Toronto Zoning By law No. 20623;
- the City of Toronto Official Plan (soon to be reviewed and updated).

Registered Airport Zoning

The Toronto Island Zoning Regulations were approved by the Governor General in Council on 30 May 1985, on the recommendation of the Minister of Transport pursuant to Section 6 of the Aeronautics Act. The regulations apply to specified lands near airports, including public road allowances, and prohibit the erection of any structure that would project above the maximum permitted elevation. Use of designated land for the disposal of waste attractive to birds is banned.

The permissible maximum heights for structures are set relative to the reference elevation of the airport which, at Toronto Island, is 76.5 metres (251 feet) above mean sea level. Construction height limits are set for four zones: the approach surfaces to the runways; the outer surface; the strip or landing area; and the transitional surface, which connects the other three surfaces.

Keep-out Zone

All regular water traffic is banned at the two ends of main runway 08-26. The restricted areas are 305 metres (1,000 feet) long by 91 metres (300 feet) wide and are marked by buoys.

Ontario Heritage Act

The existing TIA terminal has been designated a significant architectural structure by the Toronto Historical Board. Its preservation is guaranteed under the Ontario Heritage Act, as well as under the Tripartite Agreement. In compliance with the Heritage Act, any future expansion to the terminal building must be approved by the Toronto Historical Board.

Bilateral Agreements

Commercial air services on international routes are operated under bilateral agreements between the two countries whose airports are involved. Air routes can be bargaining chips in international trade and can impede the flexibility of airport operators to influence international traffic to the same degree as they influence domestic traffic. If the Island Airport continues to serve U.S. points, trans-border routes would be negotiated at the federal level and the factors involved in such negotiations could extend beyond local issues.

Tripartite Agreement

The 1983 Tripartite Agreement defines the role of the Airport in the context of three groups of permissable aviation activities: general aviation, limited commercial STOL service, and use by helicopters.

The Tripartite Agreement defines general aviation as including all civil aviation and aircraft in Weight Groups A, B and C -- up to 5,466 kilograms (12,500 pounds) -- and Saunders ST 27 aircraft. The Agreement has been amended to include Dash 8 aircraft.

A limited commercial STOL service is defined in the Agreement as:

> a service using a short take off and landing (STOL) aircraft, for hire or reward, in an operation duly licensed by the Air Transport

Committee of the Canadian Transport Commission, and operating in a market compatible with the specified capacity and capability of the airport facilities provided and in accordance with the conditions of section 14.

STOL aircraft are defined as being non jet-powered aircraft capable of maintaining a six-degree glide path on descent and a six-degree climb profile on departure and having suitable electronic navigational equipment to permit approach and departure under stated traffic control procedures.

The total number of helicopter flights in any calendar year are not to exceed 4,000 and heavy helicopter flights in the same year are not to exceed 500. A helicopter is defined as being heavy:

> if its gross weight, divided by the product obtained when the number of blades on its lifting rotor(s) is multiplied by its largest lifting rotor circle radius, is in excess of 300 kg/m (200ft/lb).

Management

Toronto Island Airport Ownership and Control

Ownership of the 87-hectare (215-acre) Toronto Island Airport site and its facilities is quite complex. The jurisdiction outlined in the original Crown grants and conditions has changed over time, because of expansion of the site through lakefill in 1938 and 1962, changes caused by the *Metro Act* of 1953, and the granting of leases.

The Board of Toronto Harbour Commissioners is the largest owner of TIA lands: 65.55 hectares (162 acres) of land and 68 hectares (168 acres) of water. The City of Toronto owns a total of 19.39 hectares (48 acres) of land and 6.45 hectares (16 acres) of water. The federal government owns two small land parcels with a total area of 2.05 hectares (five acres). Parkland and waterlots to the south and east of the Airport are owned by Metropolitan Toronto. The unfilled lots to the west of the area are owned by the City and THC and are controlled by the Province.

In 1957, the City relinquished Malton Airport to the federal government in exchange for major improvements to the Island Airport. The City also agreed that the THC would operate the Island Airport as principals and, in July 1962, leased all lands located at the Airport to the Harbour Commissioners for 21 years. On expiry of this lease, the Tripartite Agreement came into effect.

Financial Responsibilities

In 1974, the THC realized that airport revenues did not cover the combined operating costs of the Airport and the Airport ferry. Consequently, it requested subsidies from the federal and provincial governments as an alternative to closing the Airport. Transport Canada felt that the losses resulted partly from the absence of intergovernmental commitments to the continued use of the Airport and this, in their view, discouraged the capital investments necessary to improve profitability. Ottawa agreed to assume the operating losses of the Airport until its future was decided. The Province, in keeping with its policy of providing surface access to airports, agreed to defray the operating losses of the Airport ferry.

The operations of both the ferry and the Airport have been increasingly unprofitable. For example, annual deficits on the ferry *Maple City* increased from $171,000 in 1978 to $469,000 in 1987, while operating losses at the Airport increased from $232,000 to $656,000 in the same years.

Under the 1983 Tripartite Agreement, the Minister of Transport agreed to seek funding to offset any deficit incurred by the THC in operating the Airport during the term of the lease. If the City or the THC, because of a lack of funding, advise the Minister that they no longer wish to be financially responsible for operating the Airport, the Minister has 90 days to indicate whether he intends to take over its operation. If he declines, the Airport must be closed, and THC Federal lands would revert back to the City. The latter also retains the option to purchase THC Lands.

Revenue Sources

Current THC/TIA revenue sources include: aircraft landing and parking fees, docking charges, land and hangar rentals, passenger terminal rentals, and car parking fees. Transport Canada levies a tax on all passengers departing from Canadian airports, including TIA. The revenues from this tax are allocated to the Air Navigation Services and to airports that are both federally owned and operated, but they are not assigned to those airports, such as TIA, that are not directly managed by Transport Canada.

Revenue and Cost Comparisons

TIA generated revenues of $797,000 in 1987 from aircraft storage, gasoline fees, rentals, and landing fees. Over the past decade, revenues from aircraft storage have remained constant, those from gasoline charges increased by 140 per cent, and those from rentals by 90 per cent. The largest increase was in landing fees, which rose from $17,000 in 1977 to $278,000 in 1987.

TIA's 1987 operating expenses totalled $1.45 million, compared to $552,000 in 1978, a compound annual rate of increase of 9.9 per cent. The Airport operating deficits rose from $223,000 in 1978 to $656,000 in 1987, a compound growth rate of 11.4 per cent annually; operating expenses have increased at a faster rate than revenues. The recorded deficits make no allowances for replacement of capital assets.

The combined Airport and ferry deficits in 1987 were $1.12 million, compared with $400,000 in 1978; the total deficit increased at a compounded annual rate of 10 per cent.

In September 1986, the Ontario Region of Transport Canada identified the following possible additional revenue sources:

- leasing of additional land;
- public parking (now in effect);
- new retail revenues;
- passenger fees.

Transport Canada estimates that, from 1986 to 1990, these additional sources would generate a total of $3 million in incremental revenues. Of this amount, $2 million would be attributable to a

proposed passenger user fee, $400,000 to paid parking, and $425,000 to increased land rentals. These would be equivalent to an average annual incremental income of $600,000 and, according to Transport Canada, would allow recovery of direct Airport operating costs (assuming constraint of employment costs). However, it would not provide for capital recovery or interest costs.

Transport Canada Costs

Transport Canada is responsible for air traffic control and air navigation services, customs, immigration, security, and general operations at the Airport. It also contributes to the cost of general operations by covering the Airport's operating deficit, which currently stands at approximately $600,000. Total gross costs to Transport Canada, therefore, are in the range of $1.5 million annually.

Environmental Issues

Environmental issues generated by existing and possible future operations at TIA include design, noise levels, and air pollution; they were the subject of discussion at Commission hearings (see Chapter 2). Other potential issues -- soil and water contamination from fuel, aircraft, and cars and buses; lakefill; chemical pollutants; run-off problems caused by the operation of the Airport -- were not mentioned at the first set of hearings and do not appear to have been studied in any great detail.

Airport Noise

Aircraft noise is a complex issue, often not well understood by the general public, and it generates strong feelings. While the noise generated by a single aircraft can be measured and analysed, the psychological reaction of an individual to that noise is difficult to predict. Average human responses are also difficult to forecast, so most techniques for predicting responses to aircraft noise are based on the collective reactions of groups of individuals. Probable community or collective responses are generally forecast by correlating noise complaint statistics in the vicinity of selected airports with prevailing aircraft noise characteristics and movements.

The Noise Exposure Forecast (NEF) Model

Several mathematical models have been developed to express the combined effect of the variables that influence human response to noise, as a single index. One model, the Noise Exposure Forecast (NEF), has been adopted in Canada for controlling land uses in the vicinity of airports. In prediction models, the noise generated by an aircraft is quantified in EPNdB (effective perceived noise in decibels). See Appendix D for further details.

NEF contours generated by the model are generally drawn for the 40, 35, 30, 28 and 25 NEF level. (e.g. Official 25 NEF contour for TIA for 1990 are shown in Appendix D) and are used only as a guide. They do not indicate real noise levels but, rather, are a measure of the likely psychological response of an affected community to the actual noise generated by aircraft movements at a particular location near an airport. The methodology does not consider such factors as differences in actual runway usage and flight paths from those assumed in NEF calculations; variations in noise transmission under different atmospheric conditions; topographic features that may dampen or accentuate noise; helicopter movements; noise generated during taxiing; deviations from assumed exposure time standards; or differences in respondents' lifestyles.

Developers of the NEF method have established a correlation between the NEF index and likely community response near airports in the United States and Europe. This information forms the basis for many of the airport-related land use standards used in Canada, but they form only a rough guide. Appendix D contains community response predictions and an outline of NEF land use compatibility as determined by the Ontario Ministry of Municipal Affairs and Housing.

In Canada, official NEF contours are prepared by Transport Canada and are published by the Central Mortgage and Housing Corporation as a guide for land use planners. Transport Canada's recommended Land Use Table is contained in their document, Land Use in the Vicinity of Airports. However, there is no statutory requirement to comply with these standards, nor is there a legal requirement for an airport to be operated in the manner assumed for purposes of preparing the noise forecasts.

Tripartite Agreement Noise Controls

Under the Agreement, the THC is required to regulate the overall frequency of aircraft movements so as to contain the actual 28 NEF noise contour within the boundary of the official 25 NEF contour as shown on the 1990 contour map dated April 1978 (Reference Number OR11), prepared for the Canadian Mortgage and Housing Corporation by the Minister of Transport. Expansion of the actual 28 NEF contour westward, between two designated points on the official 25 NEF contour, is permitted.

Operations by jet-powered or excessively noisy aircraft are not permissible except under specified circumstances. The Agreement establishes three categories of excessively noisy propeller aircraft:

- those weighing less than 5,700 kilograms (maximum take-off weight) and generating more than 83 dB(A) on overflight, calculated in accordance with ICAO Annex 16, Chapter 6 and Appendix 3.

- conventional aircraft exceeding 5,700 kilograms maximum take-off weight and generating more than 84 EPNdB on take-off, or more than 83.5 EPNdB sideline at takeoff, or in excess of 92 EPNdB on approach, calculated in accordance with ICAO Annex 16, Chapter 5 and Appendix 2.

- STOL aircraft exceeding 5,700 kilograms maximum take-off weight and generating more than 93 EPNdB on take-off, or in excess of 88 EPNdB on sideline at takeoff, or in excess of 91.5 EPNdB on approach, calculated in accordance with ICAO Annex 16, Chapter 7 and Attachment C.

The City can require that the NEF contours be revised to include seaplane noise if they average more than 30 movements daily in any calendar year, or if the actual 28 NEF is closer at any point to the official 25 NEF for 1990 than to the official 28 NEF for 1990.

The City can also require the Minister of Transport to specify flight paths for all helicopter operations at the Island Airport if their movements in a given year exceed 4,000 or if heavy helicopter movements exceed 500. The actual NEF contours include helicopter noise for any year during which flight paths had to be followed.

Operational Safety

At present, limited Transport Canada information on the past safety record of the Crash Fire Fighting and Rescue services at TIA shows that, between 1976 and 1986, there were 18 aircraft accidents. Of these, there were minor injuries to three persons, serious injuries to one, and four persons died. The remaining 28 persons involved in these accidents were not injured. Most of the subject individuals were pilots holding private and/or recreational licences, and all but two incidents occurred in daylight.

The rate of accident occurrence at TIA has remained substantially unchanged over many years, despite more sophisticated aircraft operating procedures and landing aids.

Emergency Services

Crash, fire fighting, and rescue services currently meet Transport Canada requirements for Toronto Island Airport. A temporary fire hall accommodates these services. The water supply system is being improved and a new permanent fire hall, to be located at the west end of the Airport, is included in Transport Canada's plans for TIA.

An Emergency Response Exercise was carried out by local authorities in co-operation with the THC in November 1987 to test the TIA's emergency response capability. Results revealed the need for improved emergency procedures.

Chapter 2

The Royal Commission's Hearings on the Toronto Island Airport and Related Transportation Services

In mid-January and early February of 1989, the Royal Commission on the Future of the Toronto Waterfront had its initial meetings with the public. Commissioner David Crombie had posed questions about the future of the Toronto Island Airport. By the time the five full days of hearings were over, he had heard many answers and the key issues surrounding the Airport had been clearly defined.

Context/Transport Canada

The first submission provided a context for all forthcoming submissions. Transport Canada's Ron Binnie, Regional Director General of the Airport Authorities Group for the Ontario Region, and Ron Coulas, Director of Air Navigation Services for the Ontario Region, supplied the background to issues that would prove contentious in the first round of hearings. These included improvements in access from the mainland, the introduction of jet aircraft, regulating noise, expansion of facilities and services, the balancing of general aviation and scheduled carrier use, as well as management of the Airport and subject lands.

The public's visions of TIA's future range from phasing it out as soon as possible to permitting a bustling airport with tunnel access to the mainland, a 12-gate terminal, and perhaps even small commercial jetliners to serve a potential market of more than 2 million passengers a year.

While Transport Canada, which is the major funding body for TIA ($21 million in capital improvements since 1984; coverage of a $582,000 operating deficit in 1988), did not adopt positions on any of the disputed matters, Mr. Binnie said that new departmental policy encourages increased local responsibility for determining the needs and nature of local airports. Transport Canada would encourage TIA's operators, the Toronto Harbour Commissioners, "to continue to improve revenues from

airport operations" but, beyond that, could not comment on policy matters.

Policy is currently laid down in the 1983 Tripartite Agreement, which does not permit new runways or the extension of existing ones, and does not allow an increase in TIA lands. No vehicular access tunnel or bridge can be constructed at the 122-metre (400-foot) Western Channel that separates the Airport from the mainland at the foot of Bathurst Street. No jet aircraft are allowed, save for emergencies, medical evacuations, and during the Canadian National Exhibition Air Show. No increase in noise limits is permitted.

None of the interested parties appearing before the Royal Commission suggested any physical expansion of the TIA, nor any increase in existing noise limits, although some presentations envisaged expanded passenger services. There was also considerable disagreement on whether or not to improve access, and/or to lift the ban on jet traffic for those jets that could meet existing noise regulations.

The Transport Canada representatives provided a history of the TIA (which is also discussed in Chapter 1 of this report). Between 1984 and 1987, scheduled carrier movements increased from 4,000 a year to more than 18,000 and general aviation movements went from 147,000 to 187,000 (although some of these may have been by pilots practising take-off and touch-down techniques). "In fact," Mr. Binnie said, "only Pearson and Vancouver International airports recorded more local movements than the Island Airport in 1987."

Perhaps the most significant change between 1984 and 1987, and possibly in TIA's 50-year history, was in passenger volume. Scheduled carriers, predominantly City Express (another interested party at the Royal Commission hearings), carried some 400,000 passengers in 1987, compared with only 46,000 in 1984. Nonetheless, those 400,000 passengers, 86 per cent of whom were travelling on business, most on round trips to Ottawa and Montreal, represented only two per cent of the Toronto-area passenger traffic. Pearson International, by contrast, carried 97 per cent of passengers.

Based on the trends, and in spite of a decline to 375,000 passengers last year, Transport Canada predicts an 11 per cent annual increase in passenger traffic at TIA until 1991, when the increase will drop to three

per cent per annum until 2001. This projection, of course, is based on the limitations imposed by the existing Tripartite Agreement.

As a number of studies presented to the Royal Commission indicated, the passenger numbers would increase considerably if the Agreement could be reopened and if it were amended, particularly in regard to restrictions on accessibility.

Role

After the Second World War, when it was the headquarters of the Norwegian Air Force in exile, the Toronto Island Airport faded in commercial importance. Malton, with the necessary room to expand, became the focus of commercial aviation and, in commercial terms, Malton was where it would remain almost exclusively until well into the 1980s.

As a result, in the post-war period TIA became a general aviation airport, very much the "sleepy country airport" Toronto Councillor Dale Martin would like to see it become again (if he couldn't get rid of it entirely).

In recent years, there has been growing friction between general aviation users and scheduled carriers. Glen Hadley, a member of the Canadian Owner Pilots Association (COPA), told the Royal Commission that, "In a draft of a recent economic impact study prepared for the Harbour Commissioners, it stated that general aviation will be eliminated from the island on the basis of present and projected user fees. The Commissioners are not nearly as interested in user pay as they are in eliminating general aviation."

Hadley also said that more than half of the general aviation aircraft have already been forced out of TIA, and that 1988 figures will show a reduction of 100 general aviation movements per day compared to 1987.

Other complaints included general aviation's loss of almost 100 parking spaces (which benefitted scheduled carriers), increases in parking fees from $48 a month for a single-engine craft to $125 a month, and a reduction in the size of the new location for general aviation. Victor Pappalardo, creator of City Express, was alleged to have told

one COPA member that small planes would be eliminated from TIA within five years.

This contradicted Mr. Pappalardo's submission, which said that "general aviation should continue to be a significant part of the traffic at Toronto's downtown airport..." He introduced figures to show that, in 1987, scheduled carriers, largely City Express, represented only 9 per cent of the movements out of TIA. "And that 9 per cent", he told the Commission, "has brought almost $20 million worth of improvements [or $21 million by Transport Canada figures] to the island."

Transport Canada's Ron Binnie, questioned about the loss in aircraft parking spaces for general aviation, said the decision had been made by the Board of Toronto Harbour Commissioners, and that it was a policy issue.

Although members of COPA feel that they are being excluded from decisions made about TIA, Ian Brown, General Manager of the THC, said that their concern centred on recent increases in aircraft parking fees. "These increases", he said, "were necessitated by the continuing improvements made in facilities and services at the Airport [and] by the need to ensure that the Airport's users pay a more equitable share of the operating costs ..." Mr. Brown insists that "the general aviation community can be confident that it will continue to have an important role in the future growth and development of the Island Airport".

Beyond the specific questions related to the Toronto Island Airport, however, is the matter of overall airport planning for the Toronto-centred area. Major-General Richard Rohmer, Chief Executive Officer of Toronto Airways Limited, which runs Buttonville Airport, spoke of the need for a commission to oversee the smaller airports, including both TIA and Buttonville. The latter, which is privately owned and therefore unsubsidized, is losing money and may close.

George Grant of the Toronto Board of Trade agreed: "the network of airports in the Toronto-centred region," he said, "should be co-ordinated [and] day-to-day management should accommodate the overall requirements of transportation into and out of the...region."

Access

Access is the airport issue on which all the others are predicated, a fact that was emphasized throughout the course of the hearings. The only city-Airport link, the ferry *Maple City*, carries a maximum of four cars and 40 people per trip and, in normal conditions, makes four round-trip crossings each hour. However, each year, usually in winter, there are 10 to 15 days when storms make it unsafe or impossible to negotiate the channel and the slips, and the *Maple City* runs between the seaplane dock on the east side of the Airport and a dock at Canada Malting Limited on the mainland, well to the east and across an open field from the parking lot and City Express shuttle bus stop at Bathurst Quay.

Maple City Ferry

The ferry is perceived as a bottleneck or a safety valve, depending on wider attitudes to the Airport. Toronto Councillor Jack Layton, for example, is opposed to even a pedestrian tunnel, which is not excluded by the Tripartite Agreement on the grounds that it would be an edge-of-the-wedge concession. "One of the positive aspects of the Airport", he told the Royal Commission, "is that you have to take a ferry to get over there."

Metro Councillor Dale Martin argued that the limitations created by the existing access represent the only real control the City of Toronto has over Airport expansion; but he fears that the Province of Ontario, not involved in this round of hearings, might "expropriate" the City's interest, to gain the additional tax revenue that increased access, and jets, would generate.

Fixed-Link Access

The Island Airport sits on the westernmost end of the chain of land that comprises the Toronto Islands; Toronto Councillor Elizabeth Amer, a resident on the Islands for more than 40 years, questioned how they could retain their name and character if a fixed link were established under or over the Western Gap.

On the other hand, the owners and primary users of TIA, and Toronto Mayor Art Eggleton, want a fixed link, preferably a vehicular

tunnel limited, by definition, to providing access for service and emergency vehicles and shuttle buses.

The existing channel would be landfilled, effectively making TIA a mainland airport. Another suggestion was to have the Harbourfront Light Rail Transit (LRT) line extend west from Spadina, cut south to Bathurst Quay, tunnel under the Gap, and terminate at Hanlan's Point on the TIA's southern boundary.

The major tunnel proponents, as might be expected, are those who would probably benefit most from improved access: the general aviation community at TIA, most of whose representatives at the Commission hearings were members of the Canadian Owner Pilots Association (COPA) Flight 32; the scheduled carriers, predominantly City Express; and the THC, which operates TIA for Transport Canada and owns 66 hectares (162 acres) of the Airport's 87 hectares (215 acres) of land.

Ian Brown, the THC's General Manager, said, "Psychological studies have shown that people would rather be caught in traffic for half an hour without moving on the Gardiner Expressway while going out to Pearson than be stuck for 15 minutes waiting for that damn ferry to come back across the channel."

Mr. Brown explained that his submission had not been specifically approved by the THC's Board but was "consistent with policies that have been taken by the Harbour Commissioners in the past". He said that, if a vehicular tunnel were built, an estimated 1,267,000 passengers would use TIA in 1992. THC staff, using a feasibility study, were planning a new terminal that would ultimately accommodate 2.4 million passengers a year. Quoting a study commissioned by THC management from Acres International Ltd., he estimated that, without the tunnel, the number would be only 666,000.

Victor Pappalardo, president and sole owner of City Express, dismissed the edge-of-the-wedge argument against the vehicular access tunnel, claiming that "the Airport itself is a barrier to increased vehicle traffic on the other islands." He did not present figures showing how a tunnel would help his business, although he did say that, with even a "stand-pat" solution, City Express expected more than 500,000 passengers by 1992.

Mr. Pappalardo said that, as the result of a study of access options that he had commissioned, the vehicular tunnel had emerged as his first choice. Considering the City of Toronto's opposition to a fixed link to the Airport, he expressed concern at Harbourfront Corporation's decision to convey 16.19 hectares (40 acres) of land to the City on the current Canada Malting site -- the likely mainland beginning of any tunnel.

Other supporters of fixed-link access included the Planning Department of the Municipality of Metropolitan Toronto (although Metro Council did not have a position at the time of the hearings) and the Board of Trade of Metropolitan Toronto. Opponents included: Marion Bryden, NDP Member of the Ontario Legislature for Beaches Woodbine and her party's urban transportation critic; the Toronto Island Residents' Association; the Roncesvalles-MacDonell Residents' Association; and the Harbourfront Residents' Association.

Opposition to access expansion was based almost exclusively on maintaining a cap on TIA activity, especially because of the increase in noise levels anticipated if more aircraft were permitted at TIA. Aside from the question of access, noise was the most contentious issue to emerge from the first set of Royal Commission meetings.

Management

The Toronto Harbour Commissioners managed the construction of the Toronto Island Airport (and Malton) and have operated TIA since its inception. Both the City and the federal Department of Transport have turned over operating control to the THC, which is, of course, bound by the 1983 Tripartite Agreement.

At the hearings, the Canadian Owner Pilots Association urged the Royal Commission to recommend new management of the Toronto Island Airport. COPA's Glen Hadley said that, instead of acting in the public interest, the THC was operating it, "to quote from one of their documents 'in a manner consistent with corporate objectives' which, according to the recent economic impact study, means turning it into a mini-Pearson..

"The Harbour Commissioners' intention of putting a busy jet port in the centre of Toronto's main tourist and recreation centre, and a

substantial residential area to boot, without any public discussion, is ludicrous. More ludicrous is having our airport in the hands of the Toronto Harbour Commissioners, who, as far as I know, are not responsible to the National Harbours Board, the Minister of Transport -- in fact, no federal minister -- and, according to David Peterson, not responsible to the Province, either."

Mr. Hadley said COPA has confidence in the three new City-appointed members of the Board of the Toronto Harbour Commissioners, but is not confident that even they can "bring [THC] staff under control." And, if they can't, "we believe the Island Airport should be taken from the Harbour Commissioners and put in the hands of a publicly accountable airport management group."

COPA president Russell Beach described how such an "airport commission" would work. "The advantage is...it eliminates conflict of interest as the mandate is simply to operate the Airport in the manner most apt to meet the public demand. As a rule, airport commissions are very sensitive to the needs of airport users and indeed, airport users are usually represented on the commission and help to decide policy matters." If such a commission existed now, Mr. Beach said, most of the problems "would have disappeared overnight."

Major-General Richard Rohmer, of Toronto Airways Limited, said that he would prefer management of TIA in private hands, but because "[most] airports in Canada are publicly owned, it may be necessary to have it go that way."

Future of the Terminal Building

On the second day of hearings, January 17, 1989, the Toronto Harbour Commissioners' Ian Brown announced that construction of a new terminal building at TIA would begin in April for completion next year. The first stage would involve a building of 3,000 square metres (32,289 square feet) with six gates; by 2001, this would be expanded to 9,000 square metres (96,867 square feet) and 10 gates capable of handling 2.4 million passengers annually.

When the final day of the first set of hearings resumed on 8 February 1989, Councillor Jack Layton (now one of three City representatives on the five-person Board of Harbour Commissioners)

said the proposal was "under review." Construction did not begin in April and is apparently on hold.

Even prior to Mr. Layton's announcement, Victor Pappalardo urged that City Express be permitted to "finance, build and operate such a facility...in joint participation with the Toronto Harbour Commissioners, if they so desire." He argued that, as principal user, his company should at least have extensive input into the design of a terminal. If allowed to build the terminal, City Express would be willing to share facilities with other scheduled carriers but, in practical terms, Mr. Pappalardo felt there could be no other scheduled carriers at TIA until a new terminal is built.

The present facility, properly called the Port George VI Terminal Building, was built in 1938 concurrent with the George VI Airport. According to Scott James and Bill Greer of the Toronto Historical Board, it is thought to be the first terminal ever built by the Department of Transport and is one of the few original buildings still in use.

There is considerable support for preserving the building, and the only question is the use that would be made of it. In the design favoured by THC staff, the old terminal would remain where it is and serve as a portal into the new structure. Victor Pappalardo, however, would place his new terminal on the site of the old one and move the original building to parkland on Hanlan's Point just south of the Airport, where it could serve as an aviation museum.

Safety

Although operational safety at TIA was not a major issue at the hearings, Mayor Art Eggleton did express concern about the ability of proposed access alternatives to accommodate emergency vehicles, and advocated purchase of an on-site search and rescue helicopter at the Island Airport. Other deputants including local residents also expressed their willingness to accept change at the Airport if improvements in environmental and safety measures were provided.

Noise

Before Toronto waterfront resident Brenda Roman and her son moved into an apartment across the Western Gap from the TIA, she investigated the noise problem and found that there appears to have been only one study of the problem, done in 1982 for the Harbourfront Corporation. It refers only to "waterfowl noise" and noise generated by the ferry service. That was no longer the case in 1986, when the Romans moved into the apartment: airport use had increased substantially.

Ron Coulas, of Transport Canada, told the Royal Commission that "there is some misconception, perhaps, that scheduled traffic creates an awful lot of noise. But in terms of its contribution to the noise contours it is the smallest of the three traffic segments [itinerant general aviation, local aviation, and scheduled commercial flights]." Ms Roman disagrees. "... we had to close our balcony doors when the phone rang or we couldn't hear the caller at the other end... apparently, airplane maintenance requires airplanes to rev their engines for a long time early in the morning and late at night." Take-off and landing noise was a problem, as was the summertime phenomenon of amphibious aircraft ("loud enough to wake the dead").

But worst is the revving, also called run-up noise. "The problem is that it doesn't stop. When an airplane takes off the airplane is gone and the noise is over. There is no way of knowing how long a particular engine is going to go on revving. It's a constant." Ms Roman said that all of this airport noise, augmented by construction noise on occasion, had forced her and her neighbours indoors, with windows closed, even in the summer and even though her building cannot accommodate air conditioning.

Ms Roman stated that she called the noise control section of the City's Department of Public Works, and was referred to a police officer at 52 Division but that no one responded to her complaints. Middle-of-the-night phone calls to the Airport were similarly futile, she said.

Ms Roman's observations on noise levels were supported by a submission from the Harbourfront Residents Association, which represents 14 buildings, including condominiums, co-ops, and rental projects, that have recently been built along the Queen's Quay West

waterfront. Bill Phillips, the Association's vice-president, noted that many residents have complained, and that no complaints have been acted on. "It is pointed out that Harbourfront Corporation is the landlord, and that the Corporation has not objected."

Victor Pappalardo denied that City Express was a noise culprit, and said it is very sensitive to the needs of its neighbours: for example, he stated that City Express run-ups are always done on the field farthest from the residential area.

Noise Exposure Forecast

According to Transport Canada calculations, on the basis of its Noise Exposure Forecast (NEF), there is not supposed to be a noise problem at TIA. The mathematical model (see Chapter 1), in the words of Ron Coulas, reflects the "levels of annoyance around an airport." According to the NEF contours established in the Tripartite Agreement of 1983, no onshore area is affected beyond the minimal annoyance level.

Not unexpectedly, no individual or organization appeared before the Royal Commission to plead for increased noise levels. On the contrary, British Aerospace predicted that ever-improving aircraft technology will reduce noise significantly in succeeding generations of aircraft, including commercial jets.

Expanded Aircraft Services

Generally speaking, those who wanted scheduled carrier services at the TIA expanded also support introduction of jets, while those who oppose one oppose the other. The argument that some jet aircraft are actually quieter than some propeller-driven aircraft now using the TIA did not change any minds during the course of the hearings. Toronto Councillor Jack Layton said that the jet ban, spelled out with exemptions in the Tripartite Agreement, was not based on noise problems alone; the real concern was to prevent the TIA from becoming "a major airport on the waterfront".

Victor Pappalardo supported reopening the Tripartite Agreement to allow City Express and other scheduled carriers operating out of TIA to add a new generation of jet aircraft to their operations, using aircraft that would meet the existing NEF limitations and that could take off

and land comfortably on the TIA's longest existing runway.

He cited the BAe 146, a four-engine, reduced take-off and landing jet that can accommodate approximately 80 people; following Mr. Pappalardo's submission, representatives of British Aerospace Inc. also spoke to the Royal Commission in its favour.

Brian Holmes is a fixed-base operator (FBO) at TIA, providing food, fuel, and repairs services to the itinerant general aviation community. For 43 years, until January 1989, he ran a flying school but was forced to close it for economic reasons. Mr. Holmes currently operates a charter service and, to make it more competitive, would like to introduce small jet aircraft, such as the Cessna Citation he owns. He would also welcome the opportunity to service small-jet traffic. "When you eliminate business jets," he told the Commission, "you render general aviation FBOs [fixed base operators] uneconomic."

Members of the general aviation community offered varying opinions: COPA Flight 32 member Manfred Humphries said that he did not believe "we should even be considering letting jet powered carriers in because of the impact [they] will have on general aviation", while COPA director Howard Pearl argued that "the reason for your jet ban is no longer necessary. We see it as being in the public interest to, in fact, operate what are now called jets out of this airport." However, COPA was unanimous in endorsing the introduction of small business jets to TIA, if not commercial jets.

Future of the Airport

During the Royal Commission hearings, no one suggested physically expanding the Airport or lengthening its runways. Jack Jones, who was the THC's chief engineer between 1956 and 1981, presented a proposal for relocating the Airport on the Leslie Street Spit, which would be vastly enlarged by dredging. His plan, Bold Concept II, however, received no support from the THC or anyone else at the hearings.

Metro Councillor Dale Martin said that "perhaps we should plan for the elimination of the Airport," which, he believes, should now be seen as a non-conforming use on a Toronto waterfront increasingly devoted to cultural and recreational activities. "Are we going to compromise planning," he asked, "to see a commercial development or enterprise maximized?" Brenda Roman urged a freeze on development and on any

increases in passenger traffic. "The community I live in was created by a federal Crown corporation on federal land. I think the federal government has a responsibility to that community and others who use the land recreationally not to permit incompatible uses on adjacent land regulated by the very same government."

The COPA delegation, fighting what it feels is a battle for survival at the TIA , also demanded a freeze on expansion. "We would ask, sir," member Wayne Barrett said, "that the Crombie Commission establish a hold on the future development of the Toronto Island Airport lands until such time as definitive criteria have been established for the size of the terminal, access, and location have been established, and an overall land use zoning plan has been established."

Chapter 3

Approaches to the Future of the Airport

A number of different approaches to the future of the Toronto Island Airport were put forward during the hearings, and are being considered by the Royal Commission. They are described in this chapter, and have been grouped in keeping with the issues under which they were raised.

At the same time that the Royal Commission has been considering the future of the Island Airport, the federal Minister of Transport, the Honourable Benoit Bouchard, and the federal Minister of State for Transport, the Honourable Shirley Martin, have initiated consultations with the Province of Ontario, local governments, business, and other community leaders, on the needs and future of the entire regional air-traffic and airport system.

The recommendations of the Royal Commission for the future of the Island Airport should be considered within the context of the ministers' assessment of the larger airport system.

Role of TIA

The role of the Island Airport has become an issue at all levels -- local, provincial, and federal -- because of differing views of the Airport's mandate and its role in the City's and the region's future. Most people, including residents and commercial and local businesspeople, agree that the Airport should continue to exist, although there were a few suggestions at the hearings that it be closed. Most controversy arises when there are discussions about the appropriate degree of maintenance, improvement or expansion of the facility. There are also questions of whether the Island Airport should remain as a separate entity or be operated in conjunction with other local airports. Those involved in general aviation also express concern that projected expansion of commercial aviation would limit the amount of airport space and time available to them.

The following four approaches were espoused in evaluating the role of the Toronto Island Airport:

(i) Elimination of the Airport

The argument was made at the hearings that the Airport is a non-conforming land use in today's planning environment. If the airport was deemed to be merely peripheral to the overall regional airport system, the TIA could be eliminated and its site converted to other uses -- presumably residential and/or parkland (open space) as specified in the City of Toronto's Official Plan and in its Central Waterfront Plan.

While such a change might make the land available for other uses and possibly achieve certain environmental improvements, the elimination of the Island Airport would not decrease overall movement of air traffic, but simply move it to other airports in the region, which would feel the pressure of increased traffic. There would also be the loss of amenity for those who currently use TIA and its services, or for those who view the presence of aircraft as an enjoyable element of the central Toronto waterfront, one that should be retained.

(ii) General Aviation Only

The role of the Airport could be reduced by confining it to general aviation (GA) only and transferring commercial passenger flights elsewhere. However, this would mean passengers currently using commercial flights would face some loss of convenience, and further, that full advantage would not be taken of improvements to the Airport recently installed by Transport Canada.

If its role were reduced, the Airport would resume what has become its traditional function, although not the one that was envisaged in 1939 when it began life as Toronto's main airport. Initially, limiting the Airport to general aviation would reduce the number of flights by approximately 10 per cent per annum but would not necessarily lead to less noise: GA aircraft noise is less strictly controlled than other categories.

Furthermore, if general aviation were to expand (for example, if Buttonville closed and some of its current clientele relocated at TIA), air traffic and noise levels would increase commensurately.

(iii) Current Combined Role (GA and Commercial)

Using this approach, the Airport would be allowed to remain where and as it is now, with its current combined functions serving both general aviation and commercial users within the 1983 Tripartite Agreement, and as a component of the regional airport system.

Modest capital and access improvements could be provided. The objective would be to make the operations of the Airport safer, quieter, environmentally cleaner, more convenient, and more efficient without compromising other land uses or the quality of life along the waterfront. Both general and commercial aviation would exist at the Island Airport, with appropriate limits on the number of aircraft permitted and on Airport expansion.

(iv) Expansion

The TIA could be allowed to expand its level of activity and service over time and in accordance with agreed-on controls, from its current level of approximately 400,000 passengers per year, to, perhaps, a level of between 1.5 and 2 million passengers annually, with an increase in the number of flights (which, in 1987, totalled 198,000).

This approach would mean permitting substantial additions in capital investment for improvements, including better access to the Airport. The Airport would also be viewed as a significant factor in the regional system, absorbing commuter passengers from and providing relief to Pearson.

Such an approach would also allow additional commercial companies (for example, commuter airlines belonging to Air Canada and PWA, etc.) to use TIA. Business and/or small commercial jets would be permitted, providing they met appropriate NEF and other regulatory controls.

Expansion would give stronger emphasis to waterfront aviation uses and downtown business needs. It would have to be based on a perception that it would not jeopardize the interests of other waterfront users, that continuing technological improvements to aircraft and airports would meet noise and air pollution concerns, and that a new balance of waterfront uses could be achieved.

Access and Parking

Access to TIA is currently by self-propelled marine ferry service. In addition to this mode the Tripartite Agreement would appear to permit certain other forms of access including a cable ferry or its equivalent (a marine railway), or a pedestrian tunnel. During the hearings, various parties expressed their support for expanded access. On the other hand, this was generally opposed by residents of Bathurst Quay, those living on the Toronto Islands, and those who want "the Island to remain an island". These groups were concerned with the environmental impact of expanded access to TIA on nearby neighbourhoods and housing.

In the past 30 years, a variety of approaches have been proposed to improve access; these have included a return to the original cable ferry concept that was used from 1939 to 1963, an improved ferry service, a tunnel for service vehicles or pedestrians (or both), and a fixed or swing bridge. Enlarged surface or underground parking facilities have also been suggested. The capacities, costs, and effects of these different solutions vary significantly. Detailed engineering and cost studies for these options were not presented to the Commission during the January/February 1989 hearings.

The decision to change methods of access to the Airport and to increase the parking needed if such a decision were made would have to be consistent with the role of the airport and be assessed on environmental and safety as well as on economic grounds.

The importance of linking TIA with other modes of regional transport might also be recognized, for example, through a downtown air terminal associated with GO, VIA, and TTC services.

Noise

Noise was the environmental issue that generated the most discussion during the hearings. While residents of Bathurst Quay complained that their sleep is sometimes disturbed by aircraft run-up noise, especially during the summer, they could not identify whether it was general aviation or commuter aircraft which was the source of their annoyance. On the other hand, Harbourfront Corporation pointed out that its studies show that the level of noise caused by traffic on the Gardiner/Lakeshore Expressway is greater than that generated by aircraft using the Airport.

There are a variety of factors that influence noise levels at the Airport, including the number of daily movements, whether take-offs and landings occur during the day or at night, the runway or glide angle used, as well as the types of aircraft permitted, their loadings and aircraft engine maintenance practices. Noise is controlled through the Tripartite Agreement. It requires the Toronto Harbour Commissioners to regulate noise levels and to report to the City each month on aircraft movements, including noise and landing infractions.

Alternative approaches to noise control would therefore include the following:

(i) maintaining existing controls, or

(ii) maintaining existing controls and monitoring and extend them to apply to other activities such as aircraft ground movements and maintenance practices, or

(iii) amending the Tripartite Agreement to reduce allowable noise levels, and to limit noise generating activities during the period when the airport is closed.

Safety

Some people raised safety issues during the hearings, both with respect to on-field airport safety and off-shore approaches. In addition to the onfield improvements already planned (e.g. a new fire hall), the need for an on-site search and rescue helicopter was brought up at the hearings, and some people said that improved ground access to the Airport would improve safety or emergency measures.

An emergency response exercise in November 1987 showed the need for improvements to the then-existing procedures, but it is not clear to what extent such improvements have been planned and implemented since then.

The Commission has been advised that further presentations on safety may be made at the June hearing.

Management

The competence, accountability and management style of the Toronto Harbour Commissioners as the manager of the Airport was questioned by airport users at the hearings. Their comments raised the issue of the appropriateness of the THC continuing to manage the Island Airport, particularly considering present federal policy to move responsibility for managing and operating airports away from the federal government and to more local authorities.

Ownership and operational and financial responsibilities for TIA are currently divided among different government levels and agencies: the land is owned by the City, THC, and Transport Canada. The THC is financially and managerially responsible for operating the Airport, while Transport Canada is responsible for providing navigational and associated services and for meeting THC's operational deficits.

Over the years, Transport Canada has funded most of the major capital improvements at TIA. The Province subsidizes the ferry operation.

The THC generates revenues from its Airport operations and the commercial parking lot on the mainland, while Transport Canada's revenues are produced through the tax on passengers. However, those Transport Canada revenues are not returned to the THC but are allocated to airports directly managed by Transport Canada.

Airport planning is nominally the responsibility of the THC, but they did not provide a formally approved comprehensive airport plan to the Commission. However, Transport Canada did make reference to a land-use plan prepared by their Airports Authority Group in 1987 for the THC's consideration and use as a guide in planning the Airport's future. At the hearings, THC staff proposed that a new terminal be built, but they did not indicate if such a building would be consistent with the AAG's airport plan or how it would be funded.

Given these fragmented arrangements, it is unclear whether the THC can achieve Transport Canada's and its own objective of financial self-sufficiency for TIA. Clear accountability may require a revised financial structure.

There are a number of approaches to ownership and management that could be considered, depending on the role chosen for the Airport, and the level of importance attached to integrating it into a regional airport system, rather than maintaining it as a separate operation. It will also depend on the importance attached to linking the Toronto Island Airport with other regional modes of transportation.

The Tripartite Agreement has been in place for six years and was written as a 50-year commitment among the signatories. There has been considerable growth in commercial passenger air traffic since the document came into force in 1983 -- perhaps greater than the parties could have foreseen.

Moreover there is a changing context for the airport, which includes the following factors:

i) federal policy now is to devolve airport ownership, operation, and management from the federal government to more locally based authorities;

ii) the various levels of government (the Province, Metro, and the City of Toronto) have begun work on a new generation of plans to guide the direction and growth of the Greater Toronto Area in the next 15 to 20 years;

iii) an efficient regional transportation infrastructure, with national and international links and with air traffic integrated with other modes, will be pivotal to the successful implementation of these plans;

iv) the role and functions of the waterfront as a whole will be defined in those plans; and

v) the place of Toronto Island Airport in the regional transportation network will need to be settled.

The ownership, operation, and management choice that best supports the role of the Island Airport in this local and regional context should be selected.

Conclusion

The history and present situation of the Toronto Island Airport are described in Chapter 1 of this Report; issues of importance in regard to the Airport and its related transportation services were raised by deputants during the first round of public hearings by the Royal Commission in January and February 1989 and are described in Chapter 2. Various approaches to settling these issues are described in Chapter 3.

This Report is designed to provide a useful basis for the final day of hearings, scheduled for June 20, 1989.

The Royal Commissioner will present his recommendations on the future of the Toronto Island Airport to the Government of Canada after those hearings have been completed.

Appendix A

Transport Canada
Aircraft Movement Statistics

PEARSON INTERNATIONAL AIRPORT

ITINERANT GA, ITINERANT AND LOCAL AIRCRAFT MOVEMENTS AS % OF TOTAL AIRCRAFT MOVEMENTS

	ITINERANT GA		ITINERANT		LOCAL		
year	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	TOTAL MVMTS
1977	81,300	33.4%	232,800	95.7%	10,400	4.3%	243,200
1978	97,000	37.2%	249,300	95.6%	11,600	4.4%	260,900
1979	93,600	35.9%	253,600	97.2%	7,400	2.8%	261,000
1980	88,600	34.8%	249,900	98.0%	5,000	2.0%	254,900
1981	82,100	33.1%	246,100	99.1%	2,300	0.9%	248,400
1982	71,900	30.1%	235,100	98.5%	3,500	1.5%	238,600
1983	71,800	30.1%	235,500	98.8%	2,800	1.2%	238,300
1984	76,300	29.7%	253,300	98.5%	3,800	1.5%	257,100
1985	84,300	29.8%	282,600	99.8%	600	0.2%	283,200
1986	80,200	26.6%	301,200	99.9%	300	0.1%	301,500
1987	79,000	25.1%	313,800	99.8%	600	0.2%	314,400
1988(est)	76,100	21.9%	347,500	100.0%	125	0.0%	347,600

Source: Aircraft Movement Survey (TP577), Statistics Canada

Transport Canada
Policy and Coordination
Ontario Region
March 1989

TORONTO ISLAND AIRPORT

ITINERANT GA, ITINERANT AND LOCAL AIRCRAFT MOVEMENTS AS % OF TOTAL AIRCRAFT MOVEMENTS

	ITINERANT GA		ITINERANT		LOCAL		
year	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	TOTAL MVMTS
1977	47,700	27.0%	47,700	27.0%	129,100	73.0%	176,800
1978	48,200	25.0%	49,000	25.4%	143,700	74.6%	192,700
1979	45,500	25.1%	46,500	25.6%	134,800	74.4%	181,300
1980	49,600	25.4%	51,200	26.2%	144,200	73.8%	195,400
1981	58,700	27.4%	60,800	28.3%	153,800	71.7%	214,600
1982	62,400	30.0%	65,800	31.6%	148,200	71.3%	208,000
1983	59,700	30.7%	62,600	32.2%	131,600	67.8%	194,200
1984	56,700	37.6%	60,700	40.2%	90,200	59.8%	150,900
1985	57,800	38.4%	64,700	43.0%	85,900	57.0%	150,600
1986	68,900	37.8%	82,000	45.0%	100,300	55.0%	182,300
1987	75,300	38.0%	93,700	47.3%	104,400	52.7%	198,100
1988(est)	58,200	36.0%	73,800	45.7%	87,700	54.3%	161,500

Source: Aircraft Movement Survey (TP577), Statistics Canada

Transport Canada
Policy and Coordination
Ontario Region
March 1989

BUTTONVILLE ISLAND AIRPORT

ITINERANT GA, ITINERANT AND LOCAL AIRCRAFT MOVEMENTS AS % OF TOTAL AIRCRAFT MOVEMENTS

	ITINERANT GA		ITINERANT		LOCAL		
year	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	ANNUAL	% OF TOTAL	TOTAL MVMTS
1977	64,900	27.0%	64,900	27.0%	175,200	73.0%	240,100
1978	67,700	30.2%	67,700	30.2%	156,300	69.8%	224,000
1979	68,800	30.5%	69,400	30.8%	155,900	69.2%	225,300
1980	65,600	30.4%	68,600	31.8%	147,300	68.2%	215,900
1981	61,100	30.6%	63,700	31.9%	136,300	68.2%	200,000
1982	59,100	29.7%	60,300	30.3%	138,900	69.7%	199,200
1983	59,800	30.6%	61,000	31.2%	134,700	68.8%	195,700
1984	60,000	35.5%	61,000	36.1%	107,900	63.9%	168,900
1985	59,100	42.2%	60,100	42.9%	79,900	57.1%	140,000
1986	62,600	41.7%	63,200	42.1%	86,900	57.9%	150,100
1987	67,100	41.7%	67,500	41.9%	93,600	58.1%	161,100
1988(est)	70,000	38.9%	70,000	38.9%	110,000	61.1%	180,000

Source: Aircraft Movement Survey (TP577), Statistics Canada

Transport Canada
Policy and Coordination
Ontario Region
March 1989

Appendix B

Air Carrier Regulation Classes

Part I

Classification and Grouping of Commercial Air Services and Air Carriers

Classification

3. (1) The following classes of commercial air services are established for the purposes of these Regulations:

Rev. & Amended SOR/85-916 19-09-85

(a) Class 1: Scheduled commercial air service, being a service that is operated between points in Canada and that is required to provide public transportation of persons, goods or mail by aircraft, serving points in accordance with a service schedule at a toll per unit of traffic;

Rev. & Amended SOR/85-916 19-09-85

(b) Class 2: Regular Specific Point commercial air service, being a service that is operated between points in Canada and that is required to provide, to the extent that facilities are available, public transportation of persons, goods or mail by aircraft, serving points in accordance with a service pattern at a toll per unit of traffic;

Rev. & Amended SOR/85-916 19-09-85

(c) Class 3: Specific Point commercial air service, being a service that offers public transportation of persons, goods or mail by aircraft, serving points consistent with traffic requirements and operating conditions at a toll per unit of traffic;

Rev. & Amended SOR/85-916 19-09-85

(d) Class 4: Charter commercial air service, being a service that offers public transportation of persons or goods on reasonable demand from the base specified or the protected base denoted in the licence issued for

that commercial air service, or from or to any other point in Canada in accordance with these Regulations and the Class 4 Positioning Charges Regulations , at a toll per mile or per hour for the charter of an entire aircraft with crew, or at such tolls as may be allowed by the Committee, and includes the additional authority to perform the following Class 7 Specialty commercial air services with aircraft that the carrier may use pursuant to the terms and conditions of its Class 4 licence:

(i) aerial application and distribution,
(ii) aerial construction,
(iii) aerial control,
(iv) aerial inspection, reconnaissance and advertising,
(v) aerial photography and survey,
(vi) aerial photography restricted to scenics, and
(vii) recreational flying;

(e) Class 5: Contract commercial air service, being a service that is operated wholly within Canada from the base specified in the licence issued for that commercial air service, that offers transportation of persons or goods solely under contracts of carriage with users with whom the air carrier has a substantial relationship through corporate structure or financial control and that does not hold out to the general public, or a class or segment thereof, the offer of transportation by air;

Rev. & New SOR/79-761 22-10-79

(f) Class 6: Flying Club commercial air service, being a service that is operated from the base in Canada specified in the licence issued for that commercial air service and that provides flying training and recreational flying to members of a flying club incorporated as a non-profit organization;

Rev. & New SOR/83-166 15-02-83

(g) Class 7: Specialty commercial air service, being a service that is operated from the base specified in the licence issued for that commercial air service or from or to any other point in Canada where the licensee

performs:
(i) aerial application and distribution, being the application of chemicals or distribution of other materials from aircraft to
(A) inhibit and destroy insect life and other forms or organism injurious to plants, crops and forests, or
(B) foster the growth of crops, forests or fish including agricultural flying, aerial pest control, spraying, seeding and reseeding, forest cultivation and fish cultivation,

(ii) aerial construction, being the use of rotating wing aircraft in construction work, including aerial pole setting and aerial power line construction,

(iii) aerial control, being fire suppression, fire or frost prevention or altering the normal processes or weather, including aerial fire control, forest fire protection, firefighting, forest firefighting, forest protection, water pumping, forest control, hail suppression, aerial frost control, rain making; fog dispersal and cloud seeding,

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(iv) aerial inspection, reconnaissance and advertising, being
(A) the reporting from visual observation on events, natural phenomena or phenomena related to man-made objects, or
(B) the providing of visual messages in the atmosphere, including aerial patrol and inspection, ice reconnaissance, seal spotting, forest inspection and administration, forest patrol, pipeline patrol, powerline patrol, news service and aerial advertising,

(v) aerial photography and survey, being
(A) the taking of photographs or the recording in other tangible form of phenomena on, under or above the earth's crust by an air carrier using a camera or other measuring or recording device mounted in or attached to the carrier's aircraft and under the carrier's control, and

(B) the eventual delivery of the photograph or other record to the client in finished, semi-finished or other tangible form, including aerial photography, scintillometer survey, aerial prospecting and geophysical survey,

(vi) aerial photography restricted to scenics, being the recording of scenes only and not involving any interpretative services or the creation of maps of any kind,

(vii) flying training, being an air service for the purpose of instructing a person in the art and science of pilotage and the operation and navigation of aircraft.

(viii) recreational flying, being flights that originate and terminate at the same place without landing at any other place for the purpose of taking on or discharging passengers and that are
(A) flown over a standard course that has been advertised by the carrier,
(B) conducted for the sole purpose of the recreation of the passengers, and
(C) charged for at a rate per seat per unit of time, including sightseeing, barn storming and parachute jumping, and

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(ix) any other type of aerial work assigned by the Committee to Class 7;

(h) Class 8: International Scheduled commercial air service, being a service that is operated between points in Canada and points in any other country and that is required to provide public transportation of persons, goods or mail by aircraft, serving such points in accordance with a service schedule at a toll per unit of traffic;

(i) Class 9-2: International Regular Specific Point commercial air service, being a service that is

operated between points in Canada and points in any other country and that is required to provide, to the extent that facilities are available, public transportation of persons, goods or mail by aircraft, serving such points in accordance with a service pattern at a toll per unit of traffic;

(j) Class 9-3: International Specific Point commercial air service, being a service that is operated between points in Canada and points in any other country and that offers public transportation of persons, goods or mail by aircraft, serving such points consistent will traffic requirements and operating conditions at a toll per unit of traffic;

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(i) Class 9-4: International Charter commercial air service, being a service that is operated and any area outside Canada and that offers public transportation of persons or goods on reasonable demand at a toll per mile or per hour for the charter of the entire aircraft with crew, or at such tolls as may be allowed by the committee; and

(l) Class 9-5: International Contract commercial air service, being a service that is operated between Canada and any other country from the base specified in the licence issued for that commercial air service, that offers transportation of persons or goods solely under contracts of carriage with users with whom the air carrier has a substantial relationship through corporate structure or financial control and that does not hold out to the general public, or a class or segment thereof, the offer of transportation by air.

(2) An air carrier licensed to operate a commercial air service of a class established by subsection (1) is allocated the same class as that commercial air service.

Source: Canadian Transport Commission. *Office Consolidation of the Air Carriers Regulations*, June 2, 1983: E-205 - E208.

Appendix C

Summary of Access Studies

The 1965 Atkins Hatch Study

This study, commissioned by the THC, examined the implications of constructing a transit tunnel under the Western Channel to provide access to the Island Airport and the Island Parks. The recommended solution was a bus-only access route on a southern Bathurst Street alignment commencing near its intersection with Lakeshore Boulevard. The roadway would cross under the Channel in a tunnel, traverse the Airport in open cut and surface near Hanlan's Point. A bridge would be built for each east-west runway and a separate access ramp would be provided for the passenger terminal. The total length of the access, including the ramps at the Airport and Hanlan's Point, was to be 2,670 feet and its cost was estimated at $9.9 million.

The 1977 Metropolitan Toronto Planning Department Study

The Transportation Division of the Metropolitan Toronto Planning Department, on behalf of the Toronto Island Study Program, examined access requirements for a range of airport land uses and roles, including conversion of the site to recreational and residential uses. Alternatives examined included closing the Western Channel and dredging a new channel along the airport's southern boundary, and building bridges and a pedestrian tunnel and restricted and full-service vehicular tunnels. The study provided a comprehensive evaluation of a range of possible transportation solutions for each site development option.

The Study Group's recommendation for the general aviation and regional STOL option was a pedestrian tunnel with escalators for passengers and others and the Metro Parks Ferry for transporting service vehicles by way of the Hanlan's Point Docks.

The 1982 Access Study Group Report

The Access Study Group was set up by the Joint Co-ordinating Committee for Toronto Island Airport Development to analyse airport access requirements and issues relative to STOL operations. The

Study Group had representation from Transport Canada, the provincial Ministry of Transport, the City of Toronto Planning and Development Department, Metro, the THC, and Harbourfront Corporation. In deference to the City's position, the terms of reference excluded consideration of vehicular bridges or tunnels across the Western Channel. The three alternatives evaluated were improved ferry service, pedestrian tunnel access (ferry for emergencies), and pedestrian and service tunnel access (ferry for emergencies).

The study concluded that operating costs under the third option would be much less if the Toronto Parks Ferry were used to provide emergency back-up during the winter months.

The Study Group recommended acceptance of the third option, in support of a pedestrian and service tunnel, suggesting that the "Maple City" Ferry service be improved as an interim measure and that further consideration be given to providing a reliable access for emergency vehicles.

The 1982 City Center Airways Proposal

City Center Airways proposed to operate a Dash 7 STOL service in the Toronto/Montreal/Ottawa triangle beginning in 1983. In 1982, the airline retained a marine consulting firm to report on the scope for improving ferry access to the Island Airport.

The consultants concluded that the existing ferry could operate on a 12-minute cycle under good marine conditions. They recommended minor improvements to the vessel and its slips and examined a number of ways of reducing wave heights in the ferry dock area so as to reduce service delays and outages. The capital costs of proposed solutions ranged from $2 million to $4 million and were judged to be too expensive as interim measures. The consultants' recommended short-term solution was to provide dock facilities for a back-up ferry service in the inner harbour at an estimated cost of $1.4 million.

The proposed long-term solution was to construct a low level two-leaf swing bridge which, when open, would be clear of the channel. The bridge would normally be closed but would open on demand for vessels which could not pass underneath it. The consultants felt that the bridge

could be built in 8 months at a cost of $3.8 million. They also believed that a more costly vehicle tunnel might ultimately be justifiable.

During the winter of 1983-84, the airline staged two demonstrations to prove the practicability of curbside passenger pick-up. Passengers boarded a highway bus at the Royal York Hotel and were transported to a waiting aircraft at the Island Airport. The elapsed time, from last passenger pick-up to last passenger boarding the aircraft, was 20 minutes.

The success of these tests led to research into a high-quality downtown terminal and a dedicated radio-controlled 40-passenger luxury courtesy bus connecting directly to the aircraft. Curbside passenger pick-up would be facilitated by computerized check-in equipment on the buses. City Center's forecast, with hourly flights to Ottawa and Montreal, indicated that 580,000 air passengers would cross the Western Channel annually.

The Ontario Ministry of Transportation Proposal

The Ministry of Transportation funds the airport ferry operating deficit but has two other related concerns: first, that the 35-year-old ferry will require progressively more expensive maintenance, and second, that passenger volumes have reached levels which justify better service. The Province has examined the following five options for improving surface access:

1. A two-ferry service having a capital cost of $1.7 million for slip and ferry overhaul and annual operating costs of $1.7 million.

2. A pedestrian tunnel backed by a ferry for freight and vehicles, costing $19.5 million with annual operating costs of $1.2 million.

3. A restricted access vehicular tunnel costing $32 million with annual operating costs of $0.28 million.

4. A low-level bridge with a new recreational boat channel costing between $25 million and $29 million with annual operating costs of $0.16 million.

5. A lift bridge costing $39 million and having annual operating cost of $0.26 million.

The 1985 City Express Access Study

City Express, the largest commercial airline based at TIA, retained consultants to examine the following access options:

1. A surface road crossing of the Channel on landfill and creation of a new navigation channel south of the airport at a total cost of $20 million.

2. A causeway across the Channel, with provision for water circulation and a parking structure costing $11 million.

3. A bridge over the Channel costing $17 million including approaches.

4. A vehicular tunnel under the Channel costing $11 million.

The consultants recommended options 2 & 4, for either a causeway or a tunnel.

Appendix D

Noise

Noise Definition

Sound produces pressures in the atmosphere which can be measured. However, the psychological response of an individual to sound is subjective and determined not only by its physical pressure, but also by its tone, duration, frequency of occurrence, and by the time of day at which it is heard. Standards have been developed for translating sound pressure levels measured in physical units into equivalent psychological units. Commonly used measures include:

- dB(A) The instantaneous noise level which exists at a point in time, unadjusted for psychological factors, measured in decibels on the A scale of a sound meter.

- PNdB Perceived noise measured in decibels as heard by the human ear.

- EPNL When PNdB is adjusted for noise duration and tone, it is called the Effective Perceived Noise Level.

- NEF When the perceived noise level is adjusted for the number of flights and the time of day at which they occur it becomes the Noise Exposure Forecast.

Data Input

The values used are determined from the certified noise characteristics of the aircraft measured at specified locations on the ground during landings, take-offs and run-ups. Other inputs to the model are aircraft performance, runway system layout, flight paths, flight frequency, runway utilization, and the ratio of day flights to night flights. Day flights are those occurring between 7:00 a.m. and 10:00 p.m.; the remainder are classed as night flights. The increments of noise generated by each flight are assigned to intersection points on a grid

which represents the affected area around the airport. The noise contribution by each flight is summed logarithmically at each grid point to produce a cumulative noise exposure index for that point. Indices of equal predetermined noise values are joined by continuous lines to produce a noise contour map. Contours are generally drawn for the 40, 35, 30, 28, and 25 NEF levels.

Community Response Prediction

Based on social surveys around 21 airports used in developing land use guidelines.

AREA	RESPONSE PREDICTION
over 40 NEF	Repeated and vigourous individual complaints are likely. Concerted group and legal action might be expected.
35 - 40 NEF	Individual complaints may be vigourous. Possible group action and appeals to authorities.
30 - 35 NEF	Sporadic to repeated individual complaints. Group action is possible.
below 30 NEF	Sporadic complaints may occur. Noise may interfere occasionally with certain activities of residents.

Source: Ministry of Municipal Affairs,
Toronto, Ontario

MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING

LAND USE POLICY

NEF land use compatibility table

Land uses (1) Noise exposure forecast values

	0	28	30	35	40
Group I residential, passive use park, school, library, church, theatre, auditorium, hospital nursing home, camping or picnic area	In this range, noise is not usually a problem.	**Discretionary Range** All buildings must conform to Acoustic Design Criteria (2).	Some annoyance will occur in this range but residential development will be acceptable if approved by the municipality (2)	No new Group I uses may be established in this range, except those for which the outdoor environment is irrelevant and which meet the Acoustic Design Criteria.	
Group II hotel, motel, retail or service commercial, office, athletic field, playground, stadium, outdoor swimming pool	In this range, noise is not usually a problem.		**Discretionary Range** The characteristics of each proposed use must be studied and appropriate noise insulation must be incorporated into building design.		Group II uses may not be established beyond the 40 NEF contour unless they are adequately insulated indoor uses.
Group III industrial, warehousing, arena, general agriculture, animal breeding (3).	In this range, noise is not usually a serious problem			**Discretionary Range** Most Group III uses are permissible. In this range, provided ancillary uses are adequately insulated.	

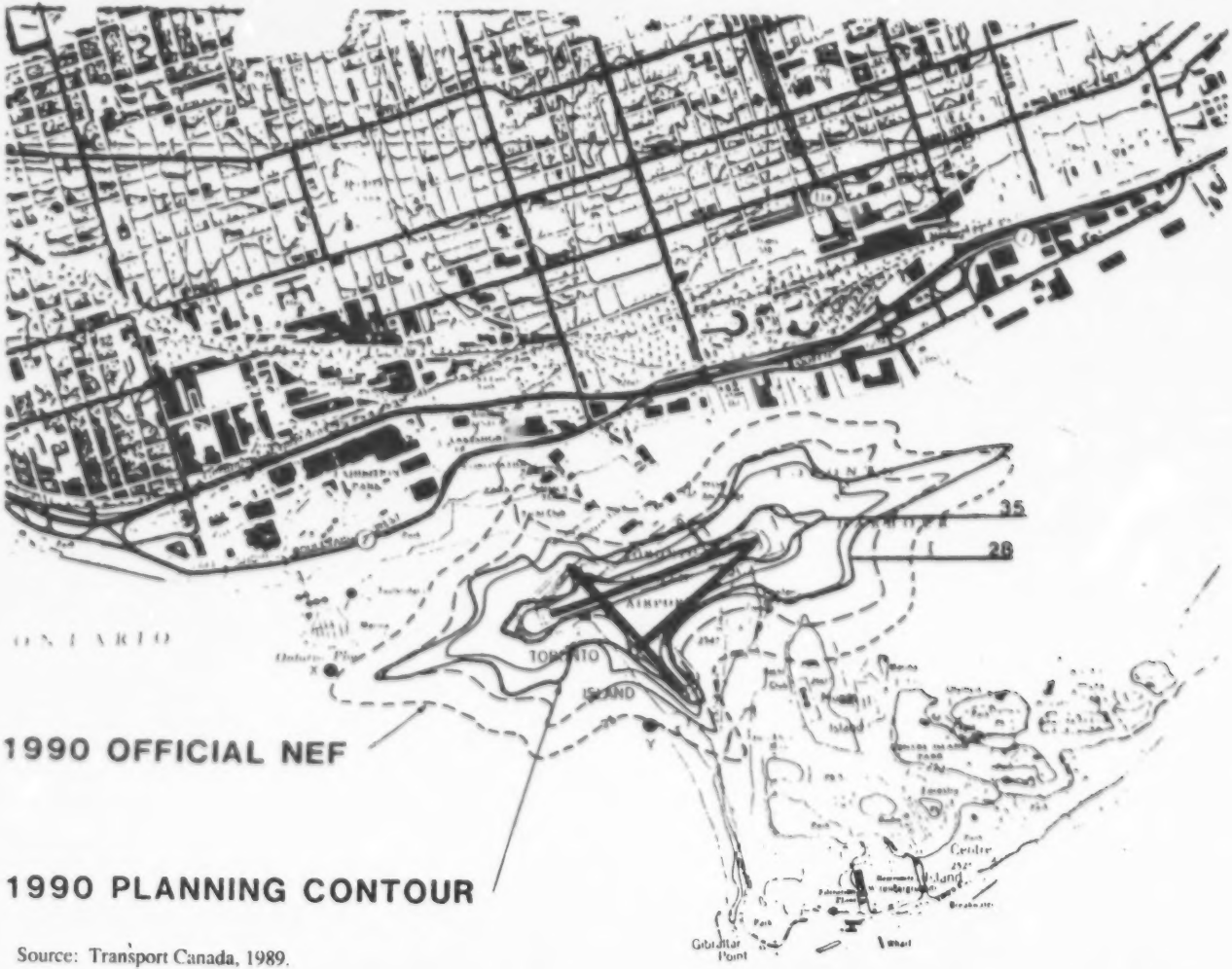
Notes

(1) Uses not specifically mentioned should be compared to the uses listed, classified in the most appropriate Group and regulated accordingly.

(2) For residential uses, refer to "New Housing and Airport Noise", N.H.A. 5185-1-78 and any amendments thereto. Acoustic design must include adequate ventilation. The developer of a residential project must undertake to inform prospective tenants or purchasers of the possible noise problem.

(3) Reseach has shown that most animals become conditioned to high noise levels. However, fur farms, and any use likely to create a bird hazard, such as a feed lot or stockyard, should not be located closer to an airport than as recommended by Transport Canada in "Land Use in the Vicinity of Airports", document S-77-4.

Source: Ministry of Municipal Affairs, Toronto, Ontario



Source: Transport Canada, 1989.

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